Vol. 25, Part 6 Nos. 590–939 & Annual Indexes

HELMINTHOLOGICAL ABSTRACTS

incorporating

BIBLIOGRAPHY OF HELMINTHOLOGY

COMPILED FROM WORLD LITERATURE OF 1956

Prepared by the

COMMONWEALTH BUREAU OF HELMINTHOLOGY
THE WHITE HOUSE, 103 ST. PETER'S STREET, ST. ALBANS, HERTS

Published by the

Commonwealth Agricultural Bureaux, Farnham Royal, Bucks, England

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Helminthological Abstracts

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Bibliography of Helminthology

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HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY

FOR THE YEAR 1956

Vol. 25, Part 6

590—Abhandlungen der Braunschweigischen Wissenschaftlichen Gesellschaft.

a. REICHENBACH-KLINKE, H. H., 1956.—" Die Entwicklung der Larven bei der Bandwurmordnung Tetraphyllidea Braun 1900." **8**, 61–73. [English summary p. 61.]

(590a) The author traces the life-cycle of *Acanthobothrium coronatum*, a common tapeworm of the dogfish. Numerous so-called "scolex pleuronectis", a plerocercous tetraphyllidean larva, were found in pilchards and anchovies. These were fed to sharks in which the parasites successfully developed. The coracidium is not known, but small plerocercoids were found in copepods. The cycle therefore seems to run through a copepod (first intermediary) and a teleostean pelagic fish (second intermediary) to the final host (a shark or skate); occasionally a teleostean fish or cephalopod may interpose serving as a transport host. The larval stages are described. G.I.P.

591—Acta Medica Veterinaria. Naples.

a. BONO, G. DEL & PELLEGRINI, S., 1956.—" Il quadro elettroforetico di liofilizzati di liquido idatideo in bovini ed ovini." **2** (6), 523–529. [English & French summaries p. 528.]

(591a) The electrophoretic behaviour of lyophilized extracts from hydatid fluid was essentially the same for sterile cysts from the liver and lungs of cattle as for fertile cysts from the liver and lungs of sheep. In each case, the protein fraction showed two components, the glycogen fraction was positive for three components in the periodic acid-Schiff test, but the Sudan Black test for lipids was negative. The cyst location did not affect the amount of protein components, but the rate of migration of the glycogen fraction was greater in extracts from hepatic cysts. These experiments confirm and expand the work by Bono in 1955 [for abstract see Helm. Abs., **24**, No. 518e]. G.I.P.

592—Acta Pediátrica Española.

a. MONTERO RODRÍGUEZ, A., 1956.—" Tratamiento de la oxiurosis infantil con piperazina." **14** (168), 1078–1085.

593—Acta Physiologica et Pharmacologica Neerlandica.

a. NOORDWIJK, J. VAN & HOLLSTEIN, U., 1956.—" The anthelmintic activity of pelletierine and isopelletierine." **5** (2), 212–213.

(593a) Pomegranate bark from three sources was extracted and the extracts, together with a commercial sample of pelletierine, were subjected to paper chromatography. This indicated that isopelletierine, methylisopelletierine and pseudopelletierine but not pelletierine were present in the extracts. All four were tested for anthelmintic activity on *Fasciola hepatica* and the results indicate that isopelletierine is the most potent anthelmintic principle in pomegranate bark. S.W.

* Titles so marked throughout this number have not been seen in the original.

594—Acta Zoologica Fennica.

a. WIKGREN, B. J., 1956.—" Studies on Finnish larval flukes with a list of known Finnish adult flukes (Trematoda: Malacocotylea)." No. 91, 106 pp.
b. SELINHEIMO, A., 1956.—" Histology of five cercariae (Trematoda: Malacocotylea)." No. 92, 29 pp.
c. WIKGREN, B. J. & MUROMA, E., 1956.—" Studies on the genus *Diphyllobothrium*. A revision of the Finnish finds of diphyllobothrid plerocercoids." No. 93, 22 pp.

(594a) Twenty-three different kinds of cercariae collected from molluscs in the Tvärminne archipelago of Finland are described and figured. Five of these are considered to be new and are named *Cercaria fennica I, II, III, IV* and *V*. *C. fennica I, II* and *V* occurred in *Bithynia tentaculata*, *C. fennica III* in *Lymnaea stagnalis*, *L. peregra* and *L. palustris*, and *C. fennica IV* in *L. stagnalis* and *L. peregra*. The following topics are discussed: degree of infection of individual snails, host specificity, damage done to snail hosts and other invertebrate and vertebrate hosts. Differences of salt content of 0 to 6 per 1,000 in brackish and fresh waters did not appear to affect the vitality of cercariae. That swimmers' itch first reported for Finland by Pirilä & Wikgren in 1955 is caused by cercariae of the *ocellata* group has been confirmed experimentally. So far 28 species of adult Trematoda have been recorded for Finland and those in the Zoological Museum of the University of Helsinki/Helsinfors are catalogued. A table sets out the number of parts or organs rejected, at meat inspection, on account of infection with *Fasciola hepatica* or *Dicrocoelium dendriticum*, for each year between 1930 and 1953. This information was obtained verbally from the Veterinary Department of the Finnish Ministry of Agriculture. R.T.L.

(594b) This English translation with editorial comments by Wikgren of a Ph.D. thesis by Selinheimo describes and figures in detail the results of a microanatomical investigation on stained specimens of five species of cercariae, viz., *Cercaria helvetica XVII* Dubois and a gymnocephalous *Cercaria C* (sp. indet.), both from *Bithynia tentaculata*, the cercaria of *Echinostoma revolutum* from *Lymnaea stagnalis*, a polyadenous *Xiphidiocercaria* (sp. indet.) and the furcocercous cercaria of *Diplostomum spathaceum* both from *Lymnaea* sp. Wikgren remarks that as the last named cercaria is stated to have emerged from *Bithynia tentaculata* also a confusion between two species has obviously occurred. R.T.L.

(594c) From a critical examination of Finnish literature, Wikgren & Muroma find that it contains many erroneous identifications of plerocercoids as belonging to *Diphyllobothrium latum* and they are of the opinion that the question of the primary fish host of *D. latum* in Finland is still unsolved. Although the vendace has long been suspected as an important source of *D. latum* infection in man it would now appear that the dominant species in vendace is *D. osmeri*. As at least every fifth Finnish citizen harbours *D. latum* the need of further investigations is emphasized. It is provisionally assumed that this tapeworm chiefly uses such fish as the ruff and perch as the first piscine host, and that it does not pass through true plankton-feeding fish but uses the larger predatory fish which take over the plerocercoids from the smaller predatory fish on which they prey, e.g. pike and turbot frequently feed on small perch and ruff which in turn have fed on plankton for considerable periods. R.T.L.

595—Acta Zoologica Sinica. Peking.

a. CHEN, H. T., 1956.—[Studies on Chinese microphallid trematodes of the subfamily Microphallinae (Trematoda: Microphallidae).] 8 (1), 49–58. [In Chinese: English summary pp. 57–58.]
b. CHEN, H. T., 1956.—[Taxonomy of trematodes from China (families and genera).] 8 (1), 99–118. [In Chinese: English summary p. 118.]

(595a) Three species of microphallid trematodes have been reported previously from China, viz., *Spelotrema pseudogonotyla*, *Microphallus minus* and *Pseudolevinseniella cheni*. Chen nows adds a fourth species, *Microphallus longicaecus* n.sp. Chen places six genera in the subfamily Microphallinae, viz., *Microphallus*, *Levinseniella*, *Spelophallus*, *Carneophallus*,

Endocotyle and *Spiculotrema*, and gives a key to separate the genera. *Microphallus longicaecus*, from the domestic duck in Hong Kong and Canton, resembles somewhat *Spelotrema claviforme* and *S. longicollis* Yamaguti, but can be distinguished from them by its shorter oesophagus and longer caeca and the longer distance of the seminal vesicle from the gut bifurcation. Its gut resembles that of *Levinseniella*, but the latter possesses a complicated genital sinus. As there is no difference between *S. claviforme* and *S. longicollis*, the latter is proposed as a synonym. Chen gives a key to the 17 species of *Microphallus* he recognizes. L.S.Y.

(595b) Chen reports briefly on the genera of trematodes recorded from China. From the literature he gives a list of the 114 genera representing 36 families (four families of Monogenea, one family of Aspidogastrea and 31 families of Digenea) and expresses the view that owing to the scattered nature of the literature there are, possibly, some omissions. The 36 families are represented in the form of a key, and then listed alphabetically with a brief diagnosis for each family, followed by a key to the 114 genera in the families, with occasional brief notes. The paper ends with an alphabetically arranged list of the genera and families with their Chinese equivalents. L.S.Y.

596—Afrique Française Chirurgicale.

a. BOURGEON, R., PIETRI, H., PANTIN, J. P., CATALANO, H. & GUNTZ, M., 1956.—"Résections hépatiques réglées pour kystes hydatiques du foie." **14** (3), 202–203.
b. SIROT, L., 1956.—" Echinococcose vertébrale." **14** (3), 204–206.
c. LIARAS, H., 1956.—" Le traitement du kyste hydatique du poumon. Le point de vue du chirurgien général." **14** (4), 217–220.
d. NOTE, D. & MONTERA, H., 1956.—" Une forme particulière d'échinococcose abdominale. L'échinococcose rétropéritonéale." **14** (5), 372–375.
e. BRÉHANT, J., 1956.—" Le kyste hydatique du pancréas." **14** (6), 405–411.
f. LIARAS, APROSIO & PALOMBA, 1956.—" Gros ventre hydatique par échinococcose secondaire du péritoine." **14** (6), 429–432.
g. FERRAND, J. & PEGULLO, J., 1956.—" A propos des accidents généraux de l'ascaridiase." **14** (6), 461–462.

597—Agricoltura Italiana.

*a. PANEBIANCO, F., 1956.—[Prevention of metastrongylosis of swine. Experimental research on the larvicidal action of fertilizers used in agriculture, with particular reference to calcium cyanamide.] **56** (12), 454–463. [In Italian.]

598—Agricultura Tropical. Bogotá.

a. ALVAREZ M., B., 1956.—" La bronquitis verminosa o bronconeumonia verminosa, problema de la ganadería colombiana." **12** (6), 371–375.

599—Agricultural Bulletin. Saga University.

*a. YOKOO, T., 1956.—" On the occurrence of the root lesion nematode, *Pratylenchus pratensis*, as the tuber parasite of the potato in Japan." No. 4, pp. 141–165.

600—Agricultural Research. Taiwan.

a. HUNG, C. H., 1956.—[Experiments on kenaf and jute root-knot nematode control.] **6** (1), 25–28. [In Chinese: English summary p. 28.]
b. TSAI, Y. P. & YOU, K. H., 1956.—[Effects of D-D on nematode root-knot of kenaf (*Hibiscus cannabinus* L.). I.] **6** (1), 41–47. [In Chinese: English summary p. 47.]
c. TSAI, Y. P., LIU, W. C. & YOU, K. H., 1956.—[Effects of D-D on nematode root-knot of kenaf. 2.] **6** (2), 39–49. [In Chinese: English summary p. 49.]

(600a) Hung found that D-D injected into the soil at 450 litres per hectare, 20 days before planting, controlled root-knot [*Meloidogyne*] in kenaf and jute fields. Ethylene dibromide was not so effective and Aldrex-2, a soil pesticide, was shown to be non-nematicidal. J.E.P.

(600b) Tsai & You observe that root-knot is occasionally a serious problem in tobacco, jute and kenaf crops grown on sandy soils in Formosa. D-D was applied at 225 to 377 litres per hectare and resulted in a reduction in nematode population and infestation of kenaf and an increase in seedling survival, growth and crop yield. Incidences of *Sclerotium* and anthracnose were also reduced by treatment with D-D. J.E.P.

(600c) Tsai *et al.* conclude that D-D, at 400 litres per hectare, is an economic dosage for the treatment of sandy Tainan soil infested with root-knot and used for growing kenaf and jute. Treatment results in root-knot control and yield increase and is more effective when applied in the spring before planting, rather than in the previous year. J.E.P.

601—Algérie Médicale.

a. TOULANT, P., 1956.—" Les lésions du fond d'oeil dans l'onchocercose." **60** (5), 351–355.
b. LOUBEYRE, J., FARKAS, E. & GRANGAUD, P., 1956.—" Nécrose caséeuse en grelot dans une caverne simulant une rétention de membrane d'hydatide rompue." **60** (5), 403–406.

(601a) Toulant provides a short didactic account of the chorioretinal and optic nerve lesions in onchocerciasis and their diagnosis, aetiology and treatment. J.M.W.

602—Allied Veterinarian. Indianapolis.

a. KOUTZ, F. R., 1956.—" Continual low-level phenothiazine feeding for control of parasites in cattle." **27** (3), 6–8, 21–22.

603—American Journal of Medicine.

a. GUATTERY, J. M., MILNE, J. & HOUSE, R. K., 1956.—" Observations on hepatic and renal dysfunction in trichinosis. Anatomic changes in these organs occurring in cases of trichinosis." **21** (4), 567–582.
b. DÍAZ-RIVERA, R. S. ET AL., 1956.—" Acute Manson's schistosomiasis." **21** (6), 918–943.

604—American Journal of Obstetrics and Gynecology.

a. SCHENKEN, J. R. & TAMISIEA, J., 1956.—" *Enterobius vermicularis* (pinworm) infection of the endometrium. A case report." **72** (4), 913–914.
b. AREÁN, V. M., 1956.—" Manson's schistosomiasis of the female genital tract." **72** (5), 1038–1053.

605—American Journal of Roentgenology, Radium Therapy and Nuclear Medicine.

a. ISAACS, I., 1956.—" Roentgenographic demonstration of intestinal ascariasis in children without using barium." **76** (3), 558–561.

606—American Journal of Surgery.

a. WARNER, B. W., 1956.—" Proctosigmoidoscopy and rectal biopsy in the diagnosis of schistosomiasis mansoni." **91** (1), 130–132.
b. JACKSON, F. C., 1956.—" Schistosomiasis mansoni: a parasitic disease of the portal venous system." **91** (5), 809–828.
c. WARNER, B. W., 1956.—" The diagnosis of schistosomiasis mansoni by sigmoidoscopy and transparency biopsy of the rectal mucous membrane." **92** (5), 743–747.

(606a) Warner draws attention to the fact that schistosomiasis mansoni is a possible cause of cirrhosis of the liver in young adults who have migrated from Puerto Rico, together with all the sequelae of portal hypertension, namely, oesophageal varices, splenomegaly, ascites and Banti's syndrome. The diagnostic and therapeutic problems involved were formerly only encountered in the U.S.A. in cases of alcoholic cirrhosis of the liver in later life. Rectal biopsy is recommended as the most satisfactory diagnostic procedure; and stress is laid on the interesting proctosigmoidoscopic picture with findings of punctate erosions and haemorrhages "like measles of the mucous membrane". J.M.W.

(606b) Jackson gives an account of the known facts concerning the pathology and clinical findings in schistosomiasis mansoni; the diagnosis and medical and surgical treatment of the disease; and the life-cycle and transmission of the causative parasite. Surgical intervention for any cause is said to be necessary in less than 1% of cases. Of seven patients with schistosomiasis mansoni diagnosed in New York and 150 cases seen at Dhahran in Saudi Arabia, five underwent surgery. These five cases are described in detail. The paper is illustrated by 13 histopathological and clinical photographs. J.M.W.

607—Anais da Escola Superior de Agricultura "Luiz de Queiroz". Piracicaba.

a. ZAMITH, A. P. L., LORDELLO, L. G. E. & BOOCK, O. J., 1956.—"Ocorrência de nematódeos do gênero *Ditylenchus* em tubérculos de batatinha no Est. de São Paulo." **12**, 159–165.
b. LORDELLO, L. G. E., 1956.—" Experimentos com os nematicidas D.D., E.D.B. e brometo de metilo no combate aos nematódeos causadores de galhas em raizes de plantas (*Meloidogyne* spp.)." **12**, 167–177.

(607a) Specimens of *Ditylenchus* were found on the progeny from potato tubers imported from Holland and Germany and grown in Brazil. No visible symptoms were shown by the plants except that the tubers showed decaying areas. The authors were unable to identify the nematodes as *D. dipsaci* or *D. destructor* and suggest the possibility of their being two species not imported with the tubers but native to Brazil. J.B.G.

(607b) Lordello showed that fumigation of soil containing tomato roots infested with root-knot nematode was more efficient if the infested roots were left to rot for 30 days. However, it was found that good control was also obtained with roots which had not been allowed to rot so it is concluded that waiting for rotting of the galls is not indispensable for efficient soil fumigation. H.R.W.

608—Anais de Faculdade de Medicina da Universidade do Recife.

a. COUTINHO, A. & LYRA, A., 1956.—" Alguns aspectos do hiperesplenismo na esquistossomíase mansônica." **16** (2), 245–261.

609—Anais Paulistas de Medicina e Cirurgia.

a. PESSÔA, S. B., 1956.—" Esquistossomose mansônica." **71** (6), 419–422.
b. PESSÔA, S. B., 1956.—" Ancilostomose." **71** (6), 425–431.

610—Anales de la Facultad de Medicina. Universidad de Lima.

a. NARANJO, J., 1956.—" Comunicación previa sobre una encuesta parasitológica en escolares del Callao." **39** (4), 1340–1345.

611—Anales de la Sociedad de Biología de Bogotá.

a. PIRINGER, W. A. & MOTTA-MONTES, A., 1956.—" Influencia de los antihelmínticos contra los huevos de *Ascaris lumbricoides*." **7** (3), 114–120.

(611a) Piringer & Motta-Montes state that 10% papain solution, 5% piperazine solution and leche de higueron had no destructive effect on the eggs of *Ascaris lumbricoides*. Oil of chenopodium destroyed the eggs slowly in from 20 to 40 days, while hexylresorcinol produced the same effect in from 15 minutes to two-and-a-half hours, but resistance to these two lethal agents increased as development of the embryo proceeded. J.M.W.

612—Annales de Médecine. Paris.

a. BLANC, F., COLLOMB, H. & ARMENGAUD, M., 1956.—" Étude de six cas de trichinose." **57** (4), 201–261.

613—Annales d'Oculistique. Paris.

a. GOERGER, F., 1956.—" Sur un cas de cysticercose intra-oculaire." **189** (12), 988–992. [English summary p. 992.]

614—Annales Universitatis Mariae Curie-Skłodowska, Lublin.

a. KOSTARZ, T., 1956.—" Płyn cyst bąblowcowych jako materiał wyjsciowy do otrzymywani czynnika wywołującego leukocytozę." [Fluid of hydatid cysts as initial material for recover of leucocytosis-promoting factor.] Section DD, **11**, 195–204. [English & Russian summarie pp. 202–204.]

615—Annali della Facoltà di Medicina Veterinaria. Pisa.

a. BOTTI, L. & PIEROTTI, P., 1956.—" Rottura delle cisti da echinococco nei grossi dott biliari dell'ovino: ittero da reflusso per incuneamento nel coledoco della membrana parassitaria." **9**, 209–216. [English & French summaries p. 216.]

616—Annali Italiani di Chirurgia.

a. BIANCO, A. & MESSINETTI, S., 1956.—" Su di un caso di echinococcosi multipla isolat della milza." **33** (11), 959–979.

617—Antibiotica et Chemotherapia. Basle.

a. WAGNER, W. H., 1956.—" Die Chemotherapie der menschlichen Filariosen." **3**, 343–397.

(617a) Wagner reviews in considerable detail existing knowledge concerning the chemotherapy of human filariasis, from both the experimental and the clinical point of view. The drugs are considered under the following groups: (i) arsenic compounds; (ii) antimony compounds; (iii) piperazine derivatives; (iv) symmetrical compounds of urea; (v) phenylphenazonium salts; and (vi) cyanine compounds. The author concludes that no drug which will kill both microfilarial and adult stages and which is equally effective against all species of human filarial parasite is yet known, and that diethylcarbamazine is therefore still the unrivalled treatment of choice. He stresses that compounds which give a satisfactory filaricidal effect in experimental infections of laboratory animals are not necessarily effective against the human parasites in clinical practice. Structural formulae are given for all the drugs mentioned. J.M.W.

618—Antibiotics Annual. New York.

a. GUMBLE, A. R., HEWITT, R. I., TAYLOR, Jr., L. H. & WALLACE, W. S., 1956.—" Effect of puromycin against oxyurids and tapeworms in laboratory mice." Year 1955-56, pp. 260–265
b. LOUGHLIN, E. H. & MULLIN, W. G., 1956.—" Combined oxytetracycline and piperazine therapy of enterobiasis." Year 1955-56, pp. 361–363.

(618a) Gumble *et al.* investigated the effect of single oral doses of puromycin against natural infections with *Aspiculuris tetraptera*, *Syphacia obvelata* and *Hymenolepis nana* var. *fraterna* in laboratory mice. They found that the minimum partially effective dose was approximately 100 mg. per kg.; that the antibiotic was less effective against *A. tetraptera* than piperazine hexahydrate, but more effective than that drug against *S. obvelata*; and that the degree of activity against these mouse oxyurids was greater than that reported for chlortetracycline, oxytetracycline, chloramphenicol or bacitracin. J.M.W.

(618b) Loughlin & Mullin treated 51 patients, ranging in age from 15 months to 51 years, with combined oxytetracycline and piperazine on the grounds that the former drug arrests development of the embryos within the eggs while the latter is lethal to the adult worms. The drugs were given together orally, twice daily, in equally divided doses after breakfast and supper for three successive days and piperazine alone for four successive days following. Doses were graded according to age, adults receiving 2 gm. of oxytetracycline and the equivalent of 2 gm. of piperazine hexahydrate daily. All 51 patients were negative by Scotch tape examination for *Enterobius vermicularis* eggs within seven days following treatment and remained negative during the 35-day post-treatment period. The authors believe that these therapeutic agents have a synergistic action against *E. vermicularis*. J.M.W.

619—Araneta Journal of Agriculture. Philippines.

a. REYES, G. M. & PALO, A. V., 1956.—" Nematode disease of rice." **3** (3), 72–77.

(619a) From observations on the symptoms of the disease of rice prevalent in Bulacan Province, and the finding of large numbers of nematodes on the discoloured sheaths and around the roots, the authors believe that the disease is caused by the nematodes. The leaves go yellow at the tips, brown patches develop on the sheaths and internodes, the panicles are distorted and the grain shrivelled. The nematodes appear to be a species of *Ditylenchus* and are obligate ectoparasites only known so far on rice. Plants grown with adequate irrigation or in standing water do not show the symptoms. [This appears to be the disease known in India as "ufra" and due to *Ditylenchus angustus*, but no mention of this is made by the authors.] M.T.F.

620—Archives of Dermatology.

a. STRAUSS, J. S., 1956.—" Seabather's eruption." **74** (3), 293–295.

(620a) Strauss studied approximately 75 cases of sea-bather's eruption following exposure in the area of Guantanamo Bay on the south-eastern shore of Cuba. Classical lesions (erythematous itching groups of papules) were observed and febrile symptoms occurred in approximately 50% of cases. Laboratory investigations, including skin tests with *Schistosoma mansoni*, gave no significant positive findings. The author points out that cross sensitivity between avian and human schistosomes is irregular. Chiefly on the grounds that in swimmer's itch it is mainly the exposed areas of the body which are affected, whereas in sea-bather's eruption lesions principally occur on covered areas, Strauss concludes that these two syndromes are distinct. He believes that the aetiological agent of sea-bather's eruption is not a schistosome. J.M.W.

621—Archives. Institut Grand-Ducal de Luxembourg. Section des Sciences Naturelles, Physiques et Mathématiques.

a. SCHUMMER, E. & MEYER, J. B., 1956.—" Note statistique sur la distomatose des bovins du Grand-Duché de Luxembourg." **23**, 241–252.

(621a) Distomatosis is distributed through most of the Grand Duchy of Luxembourg; 15·1% were infected of 3,675 cattle slaughtered during the first half of 1955 at the Luxembourg slaughterhouse. G.I.P.

622—Archives des Maladies de l'Appareil Digestif et des Maladies de la Nutrition.

a. VIGNALOU, J., BERTHAUX, P. & LIPNITZKI, J., 1956.—" Sur une épidémie familiale de distomatose hépatique." **45** (11), 418–421.

623—Archives de Médecine Générale et Tropicale.

*a. BLANC, F. & NASNY, Y., 1956.—" Elephantiasis filarien des membres inferieurs." **33** (2), 57–61.

624—Archives of Surgery. Chicago.

a. SCHENKEN, J. R. & TAMISIEA, J., 1956.—" Peritoneal granulomas due to *Enterobius vermicularis*. Report of a case and a review of the literature." **73** (2), 309–311.

625—Archivio Italiano delle Malattie dell'Aparato Digerente.

a. RICCI, G., 1956.—" Cisti d'echinococco della coda del pancreas." **22** (2), 109–121. [English, French & German summaries pp. 120–121.]

626—Archivio Italiano di Scienze Mediche Tropicali e di Parassitologia.

a. LOJODICE, C. & MAZZITELLI, L., 1956.—" Indagine sulla diffusione delle parassitosi intestinali in una collettività infantile preventoriale." **37** (12), 629–636. [English, French & German summaries pp. 635–636.]

627—Archivos del Hospital Universitario. Habana.

a. BASNUEVO, J. G., 1956.—" Un nuevo tratamiento de la clonorchiasis." **8** (6), 337–344. [English summary p. 342.]

(627a) Ten cases of *Clonorchis sinensis* infection were treated with 0·5 gm. of chloroquine diphosphate (Tanakan) daily for 25 days. In some a daily dose of 0·1 gm. of the chloroquine and 0·01 gm. of emetine hydrochloride were injected intramuscularly for 20 days. All ten cases showed clinical cure, and five furthermore remained negative on repeated bile and faecal examinations. G.I.P.

628—Archivos de Medicina Infantil.

*a. BASNUEVO, J. G., 1956.—" Nuevas orientaciones en el tratamiento de la obstrucción intestinal por *Ascaris lumbricoides*." **25** (3), 165–168.

(628a) [This paper also appears in *Rev. Kuba Med. trop.*, 1957, **13**, 34–35. For abstract see Helm. Abs., **26**, No. 286i.]

629—Archivos Médicos Panameños.

a. PIRINGER, W. A. & MOTTA MONTES, A., 1956.—" *Ascaris* pneumonitis en conejos." **5** (3), 219–225. [German summary pp. 224–225.]

(629a) Piringer & Motta Montes discuss *Ascaris* pnuemonitis in experimentally infected rabbits. The animals, which had received 17,500 to 70,000 embryonated eggs of *A. lumbricoides*, presented clinical symptoms, one of which was marked fall of body temperature, within four to eight days and died. The autopsy revealed lung lesions containing numerous viable larvae. Larvae were also present in the bronchi. Inter-alveolar partitions were infiltrated with eosinophil cells. One animal, which had received 9,000 eggs by gastric intubation, showed only loss of appetite and survived. Those which received 4,500 and 2,500 eggs did not show any symptoms of the disease. N.J.

630—Archivos de Pediatría del Uruguay.

a. NODAR, R. E., 1956.—" Tratamiento de las oxiurosis por la dietileno-diamina." **27** (2), 121–122.

631—Arkhiv Patologii. Moscow.

a. ARUTYUNOV, V. D., 1956.—[Problem of schistosomiasis in man.] **18** (7), 101–106. [In Russian.]

b. TEOKHAROV, B., 1956.—[Pathological and morphological changes in intestinal ascariasis.] **18** (8), 52–55. [In Russian.]

632—Arquivos Brasileiros de Medicina Naval.

*a. CERQUEIRA, E. DE, 1956.—" Aspectos proctosigmoidoscópicos da esquistossomose." **17** (59), 4621–4625.

*b. ANDRADE, Z. A. & GUIMARÃES, A. C., 1956.—" Síndrome de Budd-Chiari e esquistossomose mansoni, forma hepato-esplênica." **17** (59), 4645–4656.

633—Arquivos dos Hospitais da Santa Casa de São Paulo.

a. BARROS, O. M. DE, GIANNONI, F. G., MARIGO, C. & FRIZZO, F. J., 1956.—" 'Cor pulmonale' e miocardite esquistossomóticos. Considerações clínico-patológicas a propósito de dois casos." **2** (1), 1–40. [English summary pp. 37–39.]

634—Bamidgeh. Israel.

a. SALITERNIK, Z., 1956.—" Prevention of schistosomiasis (bilharziasis) in fish ponds." **8** (1), 3–6. [Also in Hebrew.]

(634a) Saliternik reviews preventive measures against schistosomiasis in view of the discovery of almost 100 cases in one of the settlements of the Beth-Shan Valley. *Bulinus* sp.

has been found in fish-ponds in the regions of the Hula Lake, the Jordan Valley, the Beth-Shan Valley, the Zebulun Valley, Shomron, Sharon and the plains of Yehuda, even when the ponds have been in existence for as little as two years. Snails are scarce in weed-free ponds; therefore, in addition to sanitary and hygienic measures, protective clothing, prevention of swimming in and boating on the ponds, and regular twice-yearly examination (and treatment, if necessary) of all fish-pond workers, ponds should be kept free of weeds and regularly emptied and dried to rid them of snails. J.M.W.

635—Beiträge zur Klinischen Chirurgie.

a. ANAGNOSTIDIS, N. E., 1956.—" Die abdomino-thorakale Inzision zur operativen Behandlung des Leberechinokokkus." **193** (4), 485–491. [English & French summaries p. 491.]

636—Biologie Médicale.

a. HARANT, H. & RUFFIÉ, J., 1956.—" Évolution et parasitisme." **45** (4), 382–394.

(636a) Harant & Ruffié discuss the various theories of evolution with particular reference to parasitism, although few helminths are mentioned. S.W.

637—Biologisch Jaarboek.

a. GOVAERT, J., 1956.—" Quelques remarques sur la fecondation et la maturation de l'oeuf de *Fasciola hepatica*." **23**, 140–144.

638—Boletim. Directoria da Produção Animal. Rio Grande do Sul, Brazil.

*a. CORRÊA, O., 1956.—[Contribution to the study of ascariasis in swine in Rio Grande do Sul.] **13** (24), 15–22. [In Portuguese.]
*b. CORRÊA, O., 1956.—[Studies on animal hydatidosis.] **13** (24), 57–61. [In Portuguese.]
*c. GLOSS, R. M., 1956.—[First appearance of *Anoplocephala magna* (Abildgaard, 1789) in Rio Grande do Sul.] **13** (25), 3–4. [In Portuguese.]

639—Boletín de Informaciones Científicas Nacionales. Quito.

a. PÉREZ, A. M., 1956.—" El Dr. Juan Iturbe, quien descubió du 1914 el factor de contagio de la bilharzia en Venezuela." **8** (76), 736–742.

640—Boletín del Instituto de Investigaciones Veterinarias. Caracas.

a. VERGANI, F., 1956.—" Nematodos de animales domésticos de Venezuela." **8** (24), 55–70.

(640a) Vergani records the principal dimensions of the following parasites of domestic animals in Venezuela: (i) cattle—*Cooperophagostomum radiatum*, *Agriostomum vryburgi*, *Bunostomum phlebotomum*, *Cooperia punctata*, *Haemonchus contortus*, *H. similis*, *Mecistocirrus digitatus*, *Trichuris discolor* and *T. globulosa*; (ii) goats—*Haemonchus contortus*, *H. similis*, *Trichostrongylus axei*, *T. colubriformis* and *T. probolurus*; (iii) pigs—*Hyostrongylus rubidus*, *Arduenna strongylina* and *Physocephalus sexalatus*; (iv) poultry—*Ascaridia galli*, *Heterakis gallinae* and *Capillaria columbae*. The paper is illustrated by 28 clear photomicrographs. J.M.W.

641—Boletín de la Sociedad de Cirugía del Uruguay.

a. BELLO, R. DI & VENTURINO, W., 1956.—" Quiste hidático del pericardio." **27** (2/3), 163–178. [English summary pp. 176–177.]
b. LOCKHART, J. & SAPRIZA VIDAL, C., 1956.—" Hidatidosis retroperitoneal primitiva." **27** (2/3), 290–303.
c. ARMAND UGÓN, C. V., 1956.—" Hidatidosis pulmonar bilateral." **27** (2/3), 309–312.
d. GARCÍA RUSSICH, W., 1956.—" Abscesso hidático osifluente mediastinal." **27** (2/3), 319–328.

642—Boletines y Trabajos. Sociedad de Cirugía de Buenos Aires.

*a. GOÑI MORENO, I. & PEREYRA, F. A., 1956.—" Hidatidosis hepática abierta en los canales biliares. Algunas consideraciones." **40** (15), 429–450.
*b. SANTAS, A. A., EGÜES, J. I. & FERNÁNDEZ OTEIZA, A., 1956.—" Quiste hidatídico del mediastino." **40** (17), 488–501.
*c. MARTINEZ, J. L., 1956.—" A propósito de quiste hidatidico del médiastino." **40** (18), 511–512.
*d. GOÑI MORENO, I., 1956.—" Contraindicación para el uso del método australiano en hidatidosis hepática." **40** (19), 552–554.
*e. JAUREGUI, P., 1956.—" Comprésion medular por quiste hidatidico intradural." **40** (24), 696–707.
*f. BREA, M. M., 1956.—" Quiste hidático del mediastino." **40** (29), 854–855.

643—Brain.

a. BICKERSTAFF, E. R., SMALL, J. M. & WOOLF, A. L., 1956.—" Cysticercosis of the posterior fossa." **79** (4), 622–634.

644—British Journal of Dermatology.

a. EL MOFTY, A. M., 1956.—" Extragenital forms of cutaneous bilharziasis." **68** (7/8), 252–257.

645—British Journal of Urology.

a. CARVER, J. H., 1956.—" Vesical schistosomiasis." **28** (2), 201–202.

646—Buletin Ştiinţific. Academiei Republicii Populare Romîne. Secţia de Ştiinţe Medicale.

a. UNGUREANU, E., IONESCU, E., BOINGEANU-DRANGA, A., BOLDESCU, I., CRÎŞMARU, V. & HUTU, I., 1956.—" Cercetări privind combaterea helmintiazelor în mediul rural." **8** (4), 1013–1034. [French & Russian summaries pp. 1032–1034.]

(646a) A single mass treatment against ascariasis of the population in a locality in the steppe area of Rumania where the soil became naturally cleared of infection every summer, was sufficient to keep the infection low for four years. In a hilly locality, where it was difficult to clear the soil, even four treatments were insufficient to retain a low level. The treatment, using santonin, cured from 30% to 80% of the population, giving the best results when applied for two to three consecutive days and was most effective in adults. Treated children, aged one to four years, were less susceptible to infection than those who were born during the four years following this treatment and who were not treated, indicating a development of some resistance to secondary moderate infections. G.I.P.

647—Bulletin de l'Académie Nationale de Médecine. Paris.

a. BRUMPT, L. C. & ROCCA SERRA, J. P. DE, 1956.—" Danger de l'introduction en Corse de nouvelles souches de paludisme et de la bilharziose vésicle." 3e Série, **140** (21/23), 425–426.

648—Bulletin of the Azabu Veterinary College, Japan.

a. SHIBANAI, D., TOZAWA, M., TAKAHASHI, M. & ISODA, M., 1956.—[Experimental studies on vaccination against *Fasciola hepatica*.] No. 3, pp. 77–86. [In Japanese: English summary pp. 85–86.]

(648a) Shibanai *et al.* prepared a vaccine against *Fasciola hepatica* and administered it to rabbits intradermally, subcutaneously, intraperitoneally or by mouth. 64 or 74 days later metacercariae of *F. hepatica* were fed to the rabbits and these were killed after a further 56 days. Both macroscopic and microscopic changes in the liver were very much less severe in the rabbits inoculated intradermally or subcutaneously than in the control rabbits; the lesions in those given the vaccine intraperitoneally or by mouth were less severe than those in the control rabbits but more severe than those which had received the vaccine by the two other routes. S.W.

649—Bulletin of the Clinical and Scientific Society Abbassiah Faculty of Medicine, Cairo.

a. NAGATY, H. F., RIFAAT, M. A. & SALEM, S., 1956.—" The incidence of parasitic infections among the third year students of the Abbassia Faculty of Medicine during the academic year 1954/1955." **7** (2), 71–75.

(649a) Nagaty *et al.* examined urine and stool samples and blood films from 179 students in the Parasitology Department of the Abbassiah Faculty of Medicine, Cairo. 12 (17%) of the 69 students from the cities of Cairo and Alexandria gave a history of previous helminthic infection; whereas examination of the samples revealed only six (9%) to be positive. The corresponding figures for the 98 students from rural areas were 74 (75%) and 15 (15%). This marked improvement is attributed to improved conditions of life, and better understanding of hygienic precautions with increasing age. Similar improvement was shown by the 12 non-Egyptian students, who came from other Middle East countries. The helminthic infections involved were schistosomiasis haematobia and mansoni, heterophyiasis, taeniasis, hymenolepiasis, ascariasis, ancylostomiasis, trichostrongyliasis, trichuriasis and enterobiasis. J.M.W.

650—Bulletin of Endemic Diseases. Baghdad.

a. BAILEY, V. M., 1956.—" A cursory examination and comparison of stool examination methods." **1** (4), 295–297.

(650a) The comparative results of faecal examinations at the Institute of Endemic Diseases in Baghdad indicate that the recovery of helminth eggs and Protozoa is markedly greater by the MIFC method [for abstract of the description of the method, which is a modification of the M.I.F. technique, see Helm. Abs., **24**, No. 3a] than by the now used direct examination in saline and Lugol's iodine. The simplicity and efficacy of the MIFC method recommend it for routine work. G.I.P.

651—Bulletin of Epizootic Diseases of Africa.

a. THOROLD, P. W. & HOLMES, C. R., 1956.—" *Spirocerca lupi* infection in dogs in Kenya." **4** (4), 283–284. [French summary p. 321.]

(651a) Thorold & Holmes give a detailed description of two cases of *Spirocerca lupi* infection in dogs in Kenya. The first case, which was fatal, showed ruptured necrotic aortic tumours, containing worms, just above the heart at post-mortem examination. The second case, which had to be put down, presented as lung neoplasm: but autopsy revealed nests of worms in the lungs and a mass of tumours opening into the oesophagus just above the heart. It is possible that many of the canine cases presenting as abdominal cough are actually *S. lupi* infections, but faecal examination for eggs is usually negative. No satisfactory treatment is known. J.M.W.

652—Bulletin of Marine Science of the Gulf and Caribbean.

a. HARGIS, Jr., W. J., 1956.—" Monogenetic trematodes of Gulf of Mexico fishes. Part XII. The family Gastrocotylidae Price, 1943." **6** (1), 28–43.

(652a) Hargis creates two new genera in the Gastrocotylinae. *Scomberocotyle* n.g., proposed for *Heteraxine scomberomori* Koratha, 1955, appears to be most closely related to *Pseudaxine* but has a more angular opisthaptor, the clamps are arranged in two unequal lateral rows, the cirrus is armed with numerous long spines and the genital atrium has no genital corona. *Neothoracocotyle* n.g., erected for *Thoracocotyle coryphaenae* Yamaguti, 1938 and *Gotocotyla acanthocybii* Meserve, 1938, differs from *Thoracocotyle* in that the cotylophore is not asymmetrically set off from the rest of the body, the clamps are not modified, the accessory sclerites are not heavily cuticularized and the genital atrium is armed. Hargis revives the family Gastrocotylidae to contain Gastrocotylinae and Vallisiinae and emends the diagnoses of Gastrocotylidae and Gastrocotylinae. As presently conceived the Gastrocotylinae contains

Scomberocotyle, *Pseudaxine*, *Gotocotyla* emended, *Thoracocotyle* emended, *Neothoracocotyle* and *Lithidiocotyle* emended. *Pseudaxine mexicana* is redescribed and *Thoracocotyle paradoxica* is made a synonym of *T. crocea*. M.McK.

653—Bulletin of the National Institute of Agricultural Sciences, Chiba. Series G. Animal Husbandry.

a. OSHIO, Y., 1956.—[Studies on the migration of the larvae of *Strongyloides ransomi* in the swine body after percutaneous infestation.] No. 12, pp. 181–186. [In Japanese: English summary p. 186.]

(653a) Oshio found that larvae of *Strongyloides ransomi* enter lymph capillaries immediately after penetrating the skin of swine and then proceed via the blood system to the lung or liver. Those which reach the lung arrive eventually in the small intestine, after passing through the trachea, oesophagus and stomach. That maturity is reached in five days from skin penetration was ascertained by tagging the larvae with P^{32} and checking the eggs for radioactivity. Rabbits are susceptible to infection with this species but maturation takes 11 days. In mice and guinea-pigs the larvae can only reach the lung and never appear in the small intestine. J.M.W.

654—Bulletin of the National Society of India for Malaria and Other Mosquito-Borne Diseases.

*a. SUBRAMANIAN, R. & BHATE, M. R., 1956.—" Filaria survey of Drug town." **4** (1) 17–20.
*b. RAGHAVAN, N. G. S., 1956.—" Filaria transmitted by anophelines." **4** (5), 163–167.
*c. SINGH, D., 1956.—" Filarial infection in country rabbits (*Lepus* sp.) " **4** (6), 213.
*d. PATTANAYAK, S. & RAGHAVAN, N. G. S., 1956.—"Microfilariae in domestic cats in India." **4** (6), 214–215.

655—Bulletin of the Ophthalmological Society of Egypt.

a. MOSTAFA, A. F., 1956.—" Schistosomiasis of the conjunctiva. A case report." **49**, 120–124. [French summary p. 124.]

656—Bulletin des Séances. Académie Royale des Sciences Coloniales. Brussels.

a. SCHWETZ, J., 1956.—" Sur le réexamen partiel de trois agglomérations congolaises, examinée six ans auparavant au point de vue malaco-schistosomique: Bunia et Irumu (Haut-Ituri) et Kasenyi (lac Albert)." New series, **2** (6), 1084–1095.

(656a) Schwetz describes the results of a re-survey of three localities where schistosomiasis is endemic six years after an earlier examination. In two of the foci in Haut-Ituri the sources of infection were flowing streams while the third was a focus amongst a fishing community on Lake Albert. Between the two stream-borne sources of infection little difference in intensity of the disease was found despite treatment of the population at one and sporadic treatment of the stream with copper sulphate at the other. The lake-side focus did show a reduction in the severity of the disease (*Schistosoma mansoni*) and this is ascribed to the fact that the fishermen were forbidden to cast their nets from the water's edge where the snail population was densest. C.W.

657—Bulletin de la Société Belge d'Ophtalmologie.

a. APPELMANS, M. & MICHIELS, J., 1956.—" Onchocercose oculaire dépistée chez un Européen trois ans après le retour d'Afrique." No. 113, pp. 494–500.

658—Bulletin des Sociétés d'Ophtalmologie de France.

a. COCHET & BENMENSOUR, 1956.—" Une rétinographie évoquant le diagnostic de filariose papillaire." Year 1956, No. 3, pp. 406–407.

659—Bulletin de la Société Vétérinaire Hellénique.

a. PANETSOS, A., 1956.—[Sur la fréquence du *Taenia échinocoque* chez les chiens d'Athénes et de Thessaloniki (Gréce).] Ser. B, No. 22, pp. 69–75. [In Greek: French summary pp. 73–74.]

(659a) Panetsos examined post mortem 124 dogs from Athens and Piraeus and found 14 to be infected with *Echinococcus granulosus*. In Salonica 33 of 155 dogs harboured this cestode. *Mesocestoides*, *Dipylidium* and *Taenia* spp. were also present; dogs heavily infected were in a poor state of health. The incidence in Athens shows a slight decrease from that reported in 1930 but no other figures are available for Salonica. The public health importance is stressed. [From the French summary.] S.W.

660—Bulletin of the Tulane Medical Faculty.

a. BEAVER, P. C., 1956.—" Human infections with canine and feline Ascaris larvae." **16** (1), 9–13.

661—Bulletin of University of Osaka Prefecture. Series B. Agriculture and Biology.

*a. NODA, R., 1956.—" Survey of the incidence of ascarid, *Toxocara canis* in dogs, with special reference to the postnatal infection as compared with the prenatal infection." **6**, 65–72.

662—Búnadarfélags Islenzka Fraedslurit.

*a. DAVÍDSSON, I. & GIGJA, G., 1956.—" Kartöfluhnúðormurinn og útrýming hans." [The potato nematode and its control.] No. 18, 12 pp.

663—Burma Medical Journal.

a. HAWKING, F., 1956.—" Filariasis." **4** (1), 25–30.

664—Byulleten Glavnogo Botanicheskogo Sada.

a. SVESHNIKOVA, N. M., 1956.—[Nematode diseases of ornamental plants.] Year 1956, No. 24, pp. 74–81. [In Russian.]
b. OLISEVICH, G. P., 1956.—[On the use of NIUIF-100 for the control of the fern nematode.] Year 1956, No. 24, pp. 81–89. [In Russian.]
c. SHMALKO, V. F., 1956.—[Features of the appearance and spread of the gall nematode in greenhouses of perennial plants.] Year 1956, No. 24, pp. 89–95. [In Russian.]

(664a) To acquaint the reader with the most important nematode diseases of ornamental plants, Sveshnikova describes *Meloidogyne*, *Ditylenchus dipsaci*, *Aphelenchoides ritzema-bosi* and *A. olesistus*, naming some of the ornamental plant hosts and including data on their distribution, the symptoms produced and control. G.I.P.

(664b) In the Moscow Botanical Gardens, *Aphelenchoides olesistus* attacked *Doryopteris pedata* f. *palmata* and *Blechnum polypodioides* very severely, making further cultivation impossible; *Pteris multifida* var. *cristata* and *Doodia media* were less severely attacked. The development of the nematodes from the egg to maturity was shown experimentally to take from 15 to 17 days. For the treatment of *B. polypodioides* NIUIF-100 (diethylparanitrophenylthiophosphate or thiophos) in 0·05%, 0·07% and 0·1% concentrations was highly effective and harmless when sprayed on both sides of the leaves four to five times every ten days. Repeated spraying was necessary as eggs were not killed. Spraying was more effective than watering; four waterings with 0·4% solution were detrimental to the worms and not to the fern, but increasing the concentration to 0·6% or the number of waterings, and dipping the plant into a thiophos solution were harmful. G.I.P.

(664c) Spreading of *Meloidogyne* infection among green-house plants can be prevented to some extent during watering by placing the pots on saucers and using a gentle stream of water close to them, and during transplantation by separating uninfected and infected plants. For determining the presence of infection two methods were used, (i) examination of roots for galls at thinning-out or transplantation, and (ii) sowing of indicator plants (cucumber,

lettuce) in the pots to be tested; the latter is useful for earlier detection and in plants where the infection of the roots is not externally discernible. Thus in the principal Botanical Gardens of the Academy of Sciences, U.S.S.R., 37% of plants in humid tropical houses and 12% in subtropical houses were found infected. Among plants showing resistance to infection, Shmalko observed and describes, in *Hedychium gardnerianum* and *H. coccineum*, the dense growth of small cells encasing the nematode body in the root cortex (leaving only the head end sunk into the root cylinder) thus isolating the female and its reproductive and toxic products from the plant. G.I.P.

665—Cahiers des Naturalistes.

a. THÉODORIDÈS, J., 1956.—" Une nouvelle espèce de nématode oxyuride parasite d'un diplopode de Grèce." **12** (3), 85–87.

(665a) *Severianoia graeca* n.sp., a thelastomatid nematode occurring in the hind gut of specimens of the millipede *Pachyjulus flavipes* collected near Athens, is described and figured. The new species differs from the three previously described species of the genus in that the female is shorter and has a relatively shorter tail, in the smaller egg, and in the position of the vulva. The oesophagus is longer than in *S. julicola* but shorter than in *S. dubia* and *S. severianoi*. The tail in the male is longer than in *S. severianoi* and the spicule smaller. *S. graeca* is believed to represent the first record of an adult nematode parasitic in an arthropod host in Greece. J.M.W.

666—California Citrograph.

a. BAINES, R. C., FOOTE, F. J. & MARTIN, J. P., 1956.—" Fumigate soil before replanting to control citrus nematode." **41** (12), 427, 448–451.

667—California Veterinarian.

*a. DOUGLAS, J. R. & BAKER, N. F., 1956.—" Some aspects of the use of phenothiazine." **9** (3), 22–24, 37.

668—Canadian Insect Pest Review.

a. BAKER, A. D., 1956.—" Notes on some nematodes in Canada, 1955." **34** (1), 134–138.
b. ANON., 1956.—" Significant border interceptions." **34** (2), 160–161.
c. ANON., 1956.—" Nematodes in strawberry." **34** (3), 184.
d. ANON., 1956.—" Significant border interceptions." **34** (3), 191.
e. ANON., 1956.—" Records of nematode identification." **34** (5), 240–246.
f. ANON., 1956.—" Border interceptions." **34** (6), 271.
g. ANON., 1956.—" Border interceptions." **34** (7), 289.
h. ANON., 1956.—" Notes on nematodes." **34** (9), 335–337.

(668a) Notes are given on the occurrence in Canada of some 60 species representing 35 genera of plant, insect and free-living nematodes. *Ditylenchus destructor* did not spread noticeably during 1955 and is not now regarded as a serious threat to the potato industry. *Heterodera avenae* was found at one new location in Ontario; otherwise the known distribution of members of this genus is unchanged. In the records of predacious nematodes, *Aporcelaimus vorax* is given as probably attacking carrot rust fly larvae at Bradford, Ontario. R.D.W.

(668b) Nematodes were intercepted on various plants from several countries including the following: *Meloidogyne incognita* on *Ardisia* sp. and *Gardenia radicans*; *M. hapla* and *M. incognita* on privet; *Pratylenchus penetrans* in lily-of-the-valley pips and *P. vulnus* in raspberry roots. D.J.H.

(668c) "Active endoparasitic nematodes" [name not given] were found in strawberry roots, the number reaching a peak at fruiting time. None were recovered from the roots after September. D.J.H.

(668d) Of the many loads of tomato plants imported from the U.S.A. several had light infections of root-knot nematodes and were destroyed. D.J.H.

(668e) Among various nematodes found in Canada the following were new records for Canada and for the province indicated: *Tylenchorhynchus magnicauda* (B.C.), *Xiphinema diversicaudatum* (Quebec), *Mononchus* (*Mylonchulus*) *incurvus* (Quebec), *M.* (*M.*) *lacustris* (Ontario), *M.* (*Mononchus*) *macrostoma* (Ontario); and the following were new records for the particular province only: *Pratylenchus vulnus* (Alberta), *Radopholus gracilis* (Quebec), *Tylenchorhynchus lenorus* (Manitoba and Alberta), *T. leptus* (Alberta), *T. maximus* (Alberta), *Heterodera punctata* (Quebec), *Criconemoides curvatum* (Alberta), *Anguina agrostis* (B.C.), *M.* (*Mononchus*) *parvus* (B.C.), *M.* (*M.*) *papillatus* (Nova Scotia), *M.* (*Mylonchulus*) [*Prionchulus*] *muscorum* (New Brunswick) and *M.* (*M.*) *brachyuris* (Quebec). J.B.G.

(668f) The golden nematode [*Heterodera rostochiensis*] and several other plant-parasitic nematodes were found in association with imported strawberry plants from Scotland. Among plants from the U.S.A. *Meloidogyne incognita* was found on *Passiflora* sp. and *Lonicera* sp.; *M. hapla* and *Pratylenchus vulnus* on *Ligustrum* sp. D.J.H.

(668g) The following plants were intercepted as being attacked by nematodes: rose infested by *Meloidogyne hapla*, two varieties of *Sansevieria* attacked by *M. incognita*, and *Pica jezoensis* seedlings attacked by *Tylenchorhynchus* sp. and *Criconemoides* sp. D.J.H.

(668h) There was no marked spread in Canada in 1956 of *Heterodera schachtii* or *H. avenae*. *H. punctata* was found on *Agrostis palustris* Huds. and in prairie grass sod. Records of *H. schachtii* var. *trifolii* continue to accumulate. *Meloidogyne hapla* occurred on carrots, *Viburnum* sp., *Philadelphus coronarius* L., lucerne and red clover; *M. incognita* on *Coleus* sp., red clover and violet. There was a new field infestation of *Ditylenchus destructor* in Prince Edward Island. Several *Tylenchorhynchus* spp. were encountered including *T. acutus* on crested wheat grass and lucerne; *T. lenorus* on wheat and *T. maximus* on alsike clover. *Anguina agrostis* occurred on Kentucky blue grass and red top grass and in bent and brown top seed importations. *Criconemoides lobatum* was found attacking red clover and *C. xenoplax* on white elm. *Xiphinema americanum* was found on lucerne and in large numbers on the roots of white elm. *X. diversicaudatum* attacked rose roots. *Radopholus gracilis* infested *Scirpus americanus* roots. A species of *Trichodorus* was associated with rose roots. Eight named *Mononchus* spp. were recorded. D.J.H.

669—Canadian Medical Association Journal.

a. MELTZER, H., KOVACS, L., ORFORD, T. & MATAS, M., 1956.—" Echinococcosis in North American Indians and Eskimos." **75** (2), 121–128.
b. OWEN, T. & LENCZNER, M., 1956.—" Generalized cysticercosis with cerebral infestation." **75** (3), 213–216.
c. COFFEY, J. E. & WIGLESWORTH, F. W., 1956.—" Trichinosis in Canadian Eskimos." **75** (4), 295–299.

(669a) Meltzer *et al.* present a comprehensive yet concise review of echinococcosis in the North American continent, covering not only the geographical distribution, morbid anatomy, clinical, radiological and laboratory diagnosis, and surgical treatment of the disease, but also the morphology and life-cycle of the parasite. 180 cases are reported from Alberta, the Yukon and Northwest Territories, where the disease is endemic in Indians and Eskimos living above the 58th parallel. These people are hunters and trappers who eat the products of their hunting and fishing, often without proper cooking. They live a nomadic life, closely associated with numerous dogs, which are essential beasts of burden. The offal is fed raw to the dogs. The herbivorous game animals harbour the cyst most frequently in the lungs. J.M.W.

(669c) Coffey & Wiglesworth report in detail two classical cases of trichinosis in Canadian Eskimos, one of which was fatal following myocardial involvement. The diagnosis was confirmed in one case by muscle biopsy and in the other at autopsy. Although the disease has been reported from among the Eskimos of northern Canada before, this is the first time that the diagnosis has been proven by demonstration of the parasite. A history of eating raw bearded seal and raw black bear, both known hosts of *Trichinella spiralis*, indicates that these animals may have been the source of infection. It is suggested that the incidence of trichinosis among Eskimos may be high. The possibility of such infection should be considered at all times in dealing with Eskimo patients. J.M.W.

670—Canadian Services Medical Journal.

a. LEWIS, F. N., 1956.—" The treatment of *Taenia saginata*." **12** (6), 519–520.

(670a) Lewis reports the cure of one patient with *Taenia saginata* who was treated by Hoekenga's method using atebrin [for abstract of the description of the method see Helm. Abs., **20**, No. 165b] and emphasizes the comparative simplicity of this method. G.I.P.

671—Časopis Lékařů Českých.

a. VOJTĚCHOVSKÁ, M., VOJTĚCHOVSKÝ, M. & PETRU, M., 1956.—" Některé parasitologické problémy u duševně nemocných." [Some problems of parasitology in mental patients.] **95** (21), 559–566. [English & Russian summaries pp. 564–565.]

672—Československá Pediatrie.

a. JÍROVEC, O., 1956.—" Některé nové poznatky v helminthologii." [Certain new data on helminthology in Czechoslovakia.] **11** (7), 457–464.

673—Ceylon Journal of Medical Science.

a. GUNEWARDENE, K., 1956.—" Observations on the development of *Dirofilaria repens* in *Aedes* (*Stegomyia*) *albopictus* and other common mosquitoes of Ceylon." **9** (1), 45–53.

(673a) Gunewardene describes the development in the mosquito host, *Aëdes* (*Stegomyia*) *albopictus*, of the larval stages of *Dirofilaria repens*, a common parasite of dogs in Ceylon. Within half an hour of infection the larvae migrate to the Malpighian tubules, where they undergo development to the infective stage. Rapid migration to the head and proboscis follows on the eighth to tenth day, probably through the connective tissue of the thorax. Common local mosquitoes were bred in the laboratory and fed on infected dogs. Successful development of *D. repens* to the infective stage occurred in *Taeniorhynchus* (*Mansonioides*) *uniformis*, *T.* (*M.*) *annuliferus*, *Armigeres* (*Armigeres*) *obturbans*, *Aëdes* (*Stegomyia*) *aegypti*, *Anopheles hyrcanus* var. *nigerrimus* and *A. barbirostris*. The first named was the most suitable vector in the laboratory. *Culex fatigans*, *C. tritaeniorhynchus*, *C. gelidus*, *Anopheles vagus*, *A. subpictus* and *A. jamesi* proved refractory to infection. J.M.W.

674—Chinese Medical Journal. Taipei.

a. FAN, P. C., HSU, J. & LIU, J. C., 1956.—[Survey and treatment of intestinal helminths in rural primary school children in northern Taiwan, Free China.] **3** (2), 60–69. [In Chinese: English summary pp. 68–69.]

b. FAN, P. C., HSU, J. & LIU, J. C., 1956.—" Studies on oxyuriasis. III. Incidence of oxyuriasis and efficacy of its treatment with anthelmintics in orphans in northern Taiwan, China." **3** (4), 182–191. [Chinese summary p. 191.]

675—Cirugía. Madrid.

a. PERAITA, P. & ANASTASIO, J. V., 1956.—" Hidatidosis espinal." **2** (7), 56–73. [English, French & German summaries p. 73.]

676—Clinica Veterinaria. Milan.

a. SELLA, A., 1956.—" Metodologia e tecnica per la ricerca e la classificazione degli strongili negli equidi." **79** (7), 193–197.

(676a) Sella refers to the importance of *Strongylus vulgaris* in the aetiology and pathogenesis of endarteritis and thrombus formation in the ascending aorta of the horse. A number of different species of worms are identified under this name on the basis of ordinary faecal examination, on account of the similarity of their eggs; but if the faeces are incubated at 27°C. for six days, diluted, if necessary, with a little sterile water, embryonation of the eggs takes place, and the resulting larvae are susceptible of specific identification. A table gives the cardinal characteristics by which the larvae of the commonest forms with which confusion arises can be differentiated from *S. vulgaris*, from each other and from free-living nematode larvae. J.M.W.

677—Comunicările Academiei Republicii Populare Romîne.

a. ROMAN, E., 1956.—" Noi contribuţii la cunoaşterea faunei de monogenee din R.P.R." **6** (1), 135–144. [French & Russian summaries pp. 142–143.]
b. LUPU, E. & ROMAN, E., 1956.—" Un caz de adaptare a unui trematod ectoparazit de pe *Misgurnus fossilis*." **6** (1), 145–149. [French & Russian summaries p. 149.]
c. ROMAN, E. & BYCHOWSKY [BIKHOVSKI], B. E., 1956.—" Un interesant trematod monogeneu—*Octomacrum europaeum* nov.sp.—parazit pe *Alburnoides bipunctatus* (Bloch)." **6** (7), 901–904. [French & Russian summaries pp. 902–904.]

(677a) Roman describes and figures ten species of Monogenea, including two which are new to science: all are new records for Rumania. *Gyrodactylus dubius* n.sp. was collected from the fins of *Nemacheilus barbatulus*, and *G. cotti* n.sp. from the gills of *Cottus gobio*. *Gobio albipinnatus vladicovi* is recorded as a new host for *Dactylogyrus cryptomeres*, and *Blicca björkna* for *D. tissensis*. The variability of certain characters in *D. cryptomeres* is discussed. S.W.

(677b) Lupu & Roman describe and illustrate *Gyrodactylus cobitis fossilis* n.subsp. from the skin of *Misgurnus fossilis*. The characters which distinguish the new subspecies from *G. cobitis*, normally parasitic on the gills of *Cobitis taenia*, are discussed and the adaptions to a different localization on the host are described. S.W.

(677c) The authors describe, illustrate and give the diagnostic characters of *Octomacrum europaeum* n.sp. from the gills of *Alburnoides bipunctatus* from Rumania. The new species is distinguished from *O. lanceatum* chiefly on the grounds of body size and proportions. S.W.

678—Copeia. New York.

a. SCHWARTZ, F. J., 1956.—" First record of infestation and death in the ictalurid catfish, *Schilbeodes miurus*, by the parasite *Clinostomum marginatum*." Year 1956, No. 4, pp. 250–251.

679—Cyprus Medical Journal.

a. MICHAELIDES, P. E., 1956.—" Hydatid disease of muscle." 8 (6), 339–340.

680—Deutsche Baumschule.

*a. GOFFART, H., 1956.—" Das Kartoffelnematodenproblem in der Baumschule." 8 (11/12), 320–321.

681—Deutsche Gesundheitswesen (Das).

a. VOGEL, C., 1956.—" Piperazin als Wurmittel. Erfahrungen mit Tasnon." **11** (27), 919–921.
b. FALCK, I. & HENKE, B., 1956.—" Zur Differentialdiagnostik der Zystizerkose." **11** (34), 1129–1132.

(681a) Vogel has successfully used the piperazine citrate preparation Tasnon in the treatment of enterobiasis and ascariasis. Against *Enterobius* 25 patients were treated in

hospital and 90 as out-patients; of the former 24 were cured and of the 69 of the latter wh returned for examination 56 were cured. Three children and three adults were treated fo ascariasis and all were cured. Because it is pleasant to take and well tolerated Tasnon is con sidered to be particularly suitable for children. A.E.

(681b) Falck & Henke describe a case of *Cysticercus cellulosae* infection of the brain i a fifty-two-year-old male associated with a basal meningitis of ten years' duration. Th differential diagnosis of *C. cellulosae* infection is discussed and its various locations in the bod listed. A.E.

682—Deutsche Landwirtschaft.

a. BORCHERT, A., 1956.—" Über die Lebereglseuche und ihre Bekämpfung." **7** (8), 407–409.

(682a) Borchert gives a general account of liver-fluke infection in sheep and cattle wit special reference to the life-history of the parasite and its snail intermediary. A.E.

683—Documenta de Medicina Geographica et Tropica. Amsterdam.

a. ALI, R., HILLERS, A. & STOLZE, E., 1956.—" *Schistosoma mansoni* infections of the femal genital organs." **8** (4), 335–336.
b. BONNE-WEBSTER, J., 1956.—" *Culex bitaeniorhynchus* as vector of *Wuchereria bancrof* in New-Guinea." **8** (4), 375–379.

(683a) Ali, Hillers & Stolze report on the clinical aspects and pathology of two cases o *Schistosoma mansoni* infection, one of which presented the clinical aspect of chronic salpingitis the other of an ovarial cyst. Ova were found in both cases and a pair of worms was present i the wall of the cyst. J.M.W

(683b) Bonne-Webster, in the course of a filariasis survey of Negeri Besar, a New Guine Papuan village, found that the three culicine species *Culex bitaeniorhynchus* (?), *C. annulirostri* and *Mansonia uniformis*, caught in houses, were naturally infected with *Microfilaria bancroft* No anopheline mosquitoes were caught in the village. *C. bitaeniorhynchus*, previously con sidered by the author never to bite man, was found in great numbers indoors and attacke man indiscriminately. The variability of this species, not only as regards habit, but also a regards the ornamentation of the adult and the nature of the breeding places, may indicat the existence of a *bitaeniorhynchus* complex. J.M.W

684—Dokladi Akademii Nauk Armyanskoi SSR.

a. AKHUMYAN, K. S., 1956.—[A new cestode—*Rodentolepis avetjanae* n.sp. from *Myocast coypus*.] **22** (4), 187–191. [In Russian.]

(684a) *Rodentolepis avetjanae* n.sp. is described and figured from *Myocastor coypus* i Armenia. It is differentiated from *R. straminea*, *R. asymmetrica*, *R. crassa*, *R. erinacei* an *R. globirostris* (ignoring the eight doubtful species) chiefly by the ten rostellar hooks whic are 0·033 mm. long and have a long handle, the three testes which are 0·049 mm. in diamete and lie in a "V", one being poral and two aporal, and the ovary which is transversely elongate has three to four lobes and lies aporally at the posterior end of the body immediately in fro of the compact vitelline gland. G.I.

685—Dokladi Akademii Nauk Azerbaidzhanskoi SSR.

*a. SHAKHTAKHTINSKAYA, Z. M., 1956.—[Two new species of nematodes from birds Azerbaijan.] **12** (1), 37–41. [In Russian.]

686—Dokladi. Moskovskaya Ordena Lenina Selskokhozyaistvennaya Akademiya imeni K.A. Timiryazeva.

a. BURDELEV, T. E., 1956.—[Disinfection of environment in ascariasis in animals.] No. 22, pp. 538–546. [In Russian.]

b. BURDELEV, T. E., 1956.—[Testing the medicinal action of phenothiazine in ascariasis.] No. 25, pp. 334–338. [In Russian.]

(686a) Burdelev describes an electrothermic apparatus for the destruction of helminth eggs in animal houses. A metal body, double-walled on its upper side, contains heating elements and a fan which are powered by an engine attached to the outside of the body. The whole is supported by a two-wheeled carriage with a handle, allowing easy movement on uneven ground, into corners and 60 cm. up the wall. Air driven by the fan over the elements heats to 450°C. to 500°C. and is passed out through a slit on the under surface of the body. Any organic particles are either charred on the ground or when they are drawn back into the apparatus between the two walls, together with a greater part of the hot air. The efficacy of this method was tested in laboratory and field experiments on ascarid eggs. All exposed eggs (dry or damp) were destroyed by air acting for one to three seconds; the efficacy falling to 86% to 96·7% (depending on length of action) when eggs were placed in pure or sewage water at 0·5 cm. depth and to 77·4% to 96·2% at 1 cm. depth. Air applied to wooden or concrete floors destroyed 99·6% of eggs when acting for 0·5 to 2 minutes per sq.m. at 1 cm. distance and all the eggs when acting for 2 to 3 minutes at 5 cm. distance. A high natural death rate was observed among eggs placed 8 cm. to 10 cm. deep into soil. At 2 cm. to 4 cm. depth, air treatment from 1 cm. distance for 1 to 2 minutes per sq. m. killed all the eggs in dry and damp soil. G.I.P.

(686b) Phenothiazine in doses of 2·5 gm. to 5·0 gm. per kg. body-weight to cats caused vomiting and pathological changes in the liver. Smaller doses of 0·5 gm. to 1·0 gm. per kg. were non-toxic, but ineffective against *Toxocara*. Thus in 16 cats treated after a 24-hour hunger diet with 0·3 gm. to 0·5 gm. per kg., two with low infections were cured, while the average intensity of infection was lowered by only 16·9%. G.I.P.

687—Down to Earth. Midland, Michigan.

a. CRENSHAW, G. L. & SHAVER, R. J., 1956.—" Piperazine and derivatives as anthelmintics." **12** (2), 30–32.

688—Duodecim.

*a. RISLAKKI, V., 1956.—" Trikiineistä ja niiden esiintymisestä Suomessa." [The incidence of trichinosis in Finland.] **72** (5), 317–329.

689—Echo Médical du Nord.

a. COUTELEN, F., DEBLOCK, S., BIGUET, J. & CAPRON, A., 1956.—" L'oxyurose appendiculaire à propos de 132 appendicectomies chez les enfants du Nord de la France. Rôle de l'oxyure dans le déterminisme de l'appendicite et des syndromes appendiculaires." **27** (3), 114–131.

(689a) Coutelen *et al.* examined 132 appendices removed from children by operation and found that threadworms were present in 76 (57·5%), trichurid eggs in 34 (27·25%), ascarid eggs in 4 (3·02%) and eggs of *Taenia saginata* in 1 (0·75%). They conclude that threadworms are rarely instrumental in provoking pathological changes of sufficient magnitude to bring about appendicitis. They are, however, often responsible for appendicular symptoms not associated with organic lesions but manifested by pain in the region of MacBurney's point. The necessity for a systematic campaign against threadworm infection in children in the north of France is emphasized. J.M.W.

690—Farmakologiya i Toksikologiya. Moscow.

a. TAREEVA, A. I., 1956.—[Comparative investigations on anthelmintic properties and on toxicity of lupinine and benzoyl lupinine.] **19** (6), 49–51. [In Russian.]

(690a) Lupinine or benzoyl lupinine (hydrochloride) in gelatin capsules was administered to cats with *Toxocara mystax* after a 12 to 18 hour hunger diet, and was followed by a laxative. Lupinine proved ineffective and, in doses of 50 mg. per kg. body-weight, was toxic or lethal. Benzoyl lupinine in doses of 80–100 mg. per kg. cured almost all cats, and in doses of 30–50 mg. per kg. cured four out of 11 and reduced the worm burden in five. Doses of 200–300 mg. per kg. injected intravenously were still harmless but 500 mg. per kg. proved lethal. Neither alkaloid was active against *Dipylidium caninum* and *Hydatigera taeniaeformis* which were also present. G.I.P.

691—Folia Veterinaria. Košice.

a. VODRÁŽKA, J., SOKOL, J. & BERECKÝ, I., 1956.—" Naše doterajšie skúsenosti s piperazínom." **1** (1/2), 5–17. [German & Russian summaries pp. 16–17.]
b. VODRÁŽKA, J., SOKOL, J. & BERECKÝ, I., 1956.—" K problematike liečby diktyokaulózy u oviec." **1** (1/2), 19–28. [German & Russian summaries p. 28.]
c. SVOBODA, A., 1956.—" K biotermii maštalných hnojív z hladiska prevencie helmintóz domácich zvierat. I. Časť: biotermia hnoja ukladaného do malých kociek." **1** (1/2), 29–37. [German & Russian summaries pp. 36–37.]
d. FRIED, K., KNEŽIK, J. & DUCHAJ, J., 1956.—" Naše pozorovania pri strongyloidóze žriebät na Slovensku." **1** (1/2), 39–49. [German & Russian summaries pp. 48–49.]
e. VODRÁŽKA, J., BERECKÝ, I. & SOKOL, J., 1956.—" O možnosti použitia emetoidných látok pri Müllerióze oviec." **1** (1/2), 51–56. [German & Russian summaries p. 56.]

(691a) Vodrážka *et al.* report on experiments with piperazine against helminthiasis in chickens, pigs and sheep. Piperazine hydrochloride administered to 46 chickens in tablets at a dose rate of 0·25 gm. per kg. body-weight eliminated 96·8% of ascarids and 12·7% of *Heterakis*, while double the dose in the form of piperazine citrate, given with food to ten chickens, proved to be 100% efficient against ascarids although its effect against *Heterakis* was not established. A dose of 0·125 gm. per kg. proved to be of little value. Piperazine hydrochloride intubated into the crop at a dose rate of 0·25 gm. per kg. and at 5% concentration gave a 100% cure in the case of ascarids and a 38·3% cure in the case of *Heterakis* while half this dose had a 79·4% efficacy in the first case and 21·9% in the second. 76·8% of young and adult ascarids were eliminated from ten pigs after two doses of 0·25 gm. piperazine citrate per kg. Piperazine hydrochloride produced no effect on *Dictyocaulus* larvae in sheep. The authors conclude that parenteral application of piperazine hydrochloride has a necrotizing effect on the host at 5% concentration, while the therapeutic index of piperazine citrate, established on young chicks, was higher than 1:40. N.J.

(691b) Vodrážka *et al.* discuss the efficacy of certain drugs in the treatment of dictyocauliasis in sheep. Korystybin, said to be of the same composition as fouadin, was given by tracheal intubation and intramuscular injection to 127 sheep, in some of which dictyocauliasis was complicated by bronchopneumonia, dicrocoeliasis and muelleriasis. The doses applied ranged from 0·5 ml. per kg. body-weight to 20 ml. per kg. body-weight. Although some of those doses were repeated up to six times, satisfactory results were not achieved. Even after treatment of the complications the improved condition of the treated animals as compared with the controls was only just perceptible. Lugol's solution and intrajodin (a compound of iodine with triethanolamine) were also ineffective. N.J.

(691c) Svoboda reports on some experiments on the survival of helminth eggs and larvae in small heaps of manure from domestic animals. Horse, cattle and pig faeces were placed in piles measuring 1·5 × 1·5 × 1 metres. Some piles were trodden down immediately, others after two to three days (noble manure). The maximum temperature was 62°C. in early-trodden horse manure and 65°C. to 70°C. in late-trodden manure. These temperatures lasted, however, for only one day and did not kill *Strongyloides* larvae or the eggs of *Parascaris equorum*.

The respective maximal temperatures of early-trodden and late-trodden cow manure were 47°C. and 52°C. respectively. These also lasted for only one day and did not kill eggs of *Bunostomum*, *Oesophagostomum* or *Strongyloides papillosus*. Eggs of *S. papillosus*, *Metastrongylus* sp. and *Ascaris suum* larvae were found still viable in pig manure, where the maximum temperature reached 55°C. N.J.

(691d) Fried *et al.* discuss *Strongyloides* infections of foals in Slovakia. Animals infected with *Strongyloides* developed slowly and grew thin; a large number had intense diarrhoea. There were no signs of eosinophilia or anaemia. Carbon tetrachloride was of little use against the infection, first symptoms of which were noticed two weeks after birth. In the case of experimental infections through the nasal mucosa larvae appeared in the faeces on the 14th day, in the case of infections *per os* on the 15th day, and in the case of infection by gastric intubation on the 16th day. Attempts to infect a foal through the skin were not successful despite preliminary scarification. N.J.

(691e) Vodrážka *et al.* report on the efficacy of emetics in the treatment of muelleriasis in sheep. Emetine compounds E_0 to E_7 in 0·2% solution were tried *in vitro* against groups of 40 to 50 first-stage larvae of *Muellerius capillaris*. E_1, E_4 and E_6 compounds had the best effect, each destroying all the larvae present within one hour. When given to 20 sheep intramuscularly, as 1% solution at a dose rate ranging from 3 mg. to 10 mg. per kg. body-weight, E_4 and E_6 compounds were most effective. Larvae reappeared in the faeces of the treated animals after an unspecified lapse of time. N.J.

692—Forskning og Forsøk i Landbruket.

a. STØEN, M., 1956.—" Utbredelse og skade av kløverål (*Ditylenchus dipsaci* (Kühn) Filipjev) på rødkløver." **7**, 353–356. [English summary p. 356.]

(692a) Støen summarizes attacks by stem eelworm on red clover previously found in Norway, the first attack having appeared in 1884. Investigations conducted from 1952–54 showed stem eelworm attacks in 22% of the first year leys and 49% of the older leys. Most damage occurred in second year and older leys and was most severe in Østlandet. D.J.H.

693—Fukushima Journal of Medical Science.

a. HOSHINO, M. & SUZUKI, H., 1956.—" Studies on the developing media for the eggs of *Ascaris*. I. Respiration of the eggs of *Ascaris lumbricoides* var. *suilla*." **3** (2), 51–56.

(693a) Hoshino & Suzuki studied the oxidation of glucose, sucrose, fructose and glycerol by eggs of pig *Ascaris*, and the effect of some detergents on the rate of oxidation. Glycerol was only slightly oxidized but glucose, fructose and sucrose were oxidized at a high rate. Glucose oxidation was inhibited in the initial stages by malonate but the activity was restored rapidly. Tween 80 and Triton X-100 increased the oxygen consumption considerably but Triton A-20 had only a slight effect and the effect of this last detergent on glucose oxidation was not observed. Arsenite inhibited the increase in oxygen consumption stimulated by Tween 80. S.W.

694—Gaceta Médica de Caracas.

a. HORRAX, G., RUIZ RODRÍGUEZ, J. M. & CASTILLO, R., 1956.—" Lesions medulares de origen bilharziano." **64** (6/9), 253–258.

695—Gastroenterology. Baltimore.

a. RAGHEB, M., 1956.—" Schistosomiasis of the liver. Clinical, pathologic and laboratory studies in Egyptian cases." **30** (4), 631–660.
b. NEUMANN, E., MATZNER, M. J. & WINDWER, C., 1956.—" Intestinal parasitism in ambulatory gastrointestinal patients in Brooklyn, New York." **31** (3), 239–245.

(695a) Ragheb, working in Egypt, studied 125 cases of schistosomiasis with demonstrable hepatomegaly by clinical examination, liver biopsy and liver function tests. In 76

cases infection was with *Schistosoma haematobium* alone, in 31 cases with *S. mansoni* alone, and in the remaining 18 infections with both species concurrently. *S. haematobium* eggs were found in the bowel wall in 25 cases. General ill health, weakness and discomfort in the left hypochondrium were the most frequent presenting complaints. Sigmoidoscopic lesions were the commonest clinical finding. Enlargement of liver and spleen was more marked in ascitic than non-ascitic cases, as were also development of collateral circulation, incidence of haematemesis and oedema of the lower limbs. Needle biopsy of the liver revealed periportal inflammation and fibrosis as the most frequent changes. Liver function—as indicated by the serum albumin and globulin levels, colloidal gold test, bromsulphalein retention test and prothrombin level—was abnormal in the majority of cases. There was a significant correlation between bromsulphalein retention and extent of liver fibrosis. The influence of nutritional factors on these findings is discussed. J.M.W.

696—Gazeta do Agricultor, Moçambique.

a. TIAGO, J. S., 1956.—" Um grave inimigo da cultura da batata." [*Heterodera rostochiensis.*] **8** (90), 334–335.

697—Gazette Médicale de France.

a. SAVATON-PILLET, J., 1956.—" Traitement des helminthiases intestinales chez l'enfant." **63** (11), 1045–1060.

698—Gazzetta Veterinaria. Milan.

a. MANARESI, C., 1956.—" Strongilosi polmonare nel suino. Frequenza del reperto." No. 2, p. 39.

699—Giornale di Malattie Infettive e Parassitarie.

a. MACCHIA, A. & PREVITI, A., 1956.—" La curva da carico con acido nicotinico nei bambini con parassitosi intestinale." **8** (7), 265–268.

700—Glasnik Higienskog Instituta. Belgrade.

a. TODOROVIĆ, S. & POPOVIĆ, D., 1956.—[A contribution to the knowledge of the incidence of intestinal helminths in pre-school and school children in Belgrade and Zemun.] **5** (4), 85–90. [In Serbian: English summary pp. 89–90.]

701—Harefuah.

a. YOELI, M., 1956.—[A survey of filariasis among Indian Jews in Israel.] **51** (3), 51–57. [In Hebrew: English & French summaries pp. 56–57.]
b. YOELI, M., 1956.—[On an agglutination phenomenon of microfilariae occurring in blood of *Wuchereria bancrofti* carriers.] **51** (3), 63–67. [In Hebrew: English & French summaries p. 67.]
c. LASS, N. & NITZANI (GENAZZANI), C., 1956.—[The Casoni test in hydatid disease.] **51** (9), 205–209. [In Hebrew: English & French summaries pp. 208–209.]

(701a) Yoeli found that 102 out of 878 (11·6%) Indian-Jewish (Malabar) immigrants in Israel were carriers of *Wuchereria bancrofti*. Microfilaria carriers were found among all age groups. The majority showed no clinical manifestations of their infection. In Israel the Indian Jews are grouped in ethnically homogeneous villages in some of which *Culex molestus* infected with *W. bancrofti* has been found; and this species has also been successfully infected in laboratory experiments. It is concluded that under the conditions prevailing in modern settlements in Israel, and in view of the energetic anti-filariasis campaign being carried out by the health authorities, filariasis will not spread in the country and existing foci will be eliminated in due time. J.M.W.

(701b) The English summary of this paper reads as follows: "Agglutination of microfilariae was observed *in vitro* in venous blood obtained from 13 *Wuchereria bancrofti* carriers, recent immigrants from Cochin, India. The agglutinated masses of the microfilariae showed

a distinct pattern, with the tails of the larvae directed towards the center of the mass and heads towards the periphery. A marked depletion in the number of free microfilariae in the blood was noticed after agglutination and thigmotaxis took place. A strict relation between the occurrence of the agglutination phenomenon and the amount of anticoagulant (heparin) added to the drawn blood, was clearly established. Intravenous injection of heparin during daytime partially releases microfilariae of *W. bancrofti* into the peripheral blood for a short time. From the preliminary experiments it is presumed, that microfilariae gather together in the capillaries and other vessels of the lung during their absence from the peripheral blood, by the power of agglutination and thigmotaxis. The mechanism responsible for these periodic phenomena originates in cyclical changes in the blood and in fluctuations of blood coagulation reactions occurring during periods of work and rest." J.M.W.

(701c) In 34 out of 37 cases of echinococcosis proven at operation the Casoni test gave an immediate positive reaction. The test should be performed, in association with the Prausnitz-Kuestner passive transfer method, in every suspected case of echinococcosis. J.M.W.

702—Helvetica Medica Acta.

a. RIZK, G. Z., 1956.—" Remarques sur l'éosinopénie, observations chez des malades de schistosomiase." **23** (4/5), 606–609.

703—Higijena. Belgrade.

a. LEPEŠ, T. & KRŠNJAVI, B., 1956.—" Prilog poznavanju crijevnih parasita čovjeka u našoj zemlji. (Crijevni parasiti kod djece u Bjelovarskoj zdravstvenoj oblasti—XI dio)." **8** (1), 55–61. [English summary p. 61.]

(703a) Among the intestinal parasites found in 483 children aged seven to twelve years in Bjelovar were the following helminths: *Enterobius vermicularis* in 90·7%, *Ascaris lumbricoides* in 64·8% and *Trichuris trichiura* in 59·4%. These rates of infection are similar to those found in other areas of Yugoslavia. G.I.P.

704—Hirosaki Medical Journal.

a. ATSUMI, T., SATO, K., ABO, S. & NISHIMURA, K., 1956.—[Chronic pancreatitis experimentally produced by *Ascaris* eggs.] **7** (1), 1–11. [In Japanese: English summary p. *1.]
b. KIKUCHI, H., 1956.—[Studies on the differentiation between eggs of *Trichostrongylus orientalis* and those of *Ancylostoma duodenale* by means of culture.] **7** (1), 79–82. [In Japanese: English summary p. *14.]
c. MARUYAMA, M., 1956.—[A study on the colloid-osmotic pressure and the protein content of the body fluid of *Ascaris lumbricoides*.] **7** (1), 91–93. [In Japanese: English summary p. *16.]
d. NISHIMURA, K., 1956.—[Experimental culture of *Ascaris lumbricoides* in the bile extracted from the human body.] **7** (1), 155–157. [In Japanese: English summary p. *28.]
e. NISHIMURA, K., 1956.—[The statistical study on the 81 cases of the *Ascaris* invasion into the bile duct.] **7** (2), 250–265. [In Japanese: English summary pp. *51–*52.]

(704a) Atsumi *et al.* injected *Ascaris* eggs suspended in physiological saline into the pancreas of dogs (i) via the pancreatic duct, and (ii) directly into the glandular tissue, with resulting acute and chronic pancreatitis. No tubercle formation was observed, but white cell infiltration, oedema and abscess formation occurred in the acute stage, and increase of connective tissue, local eosinophilia and appearance of foreign body giant cells in the chronic stage. J.M.W.

(704b) Kikuchi found that the eggs of *Trichostrongylus orientalis* could be readily differentiated from those of *Ancylostoma duodenale* by their higher survival rate under conditions of culture at low temperature. At 10°C. to 15°C. for two weeks after 7°C. for three days, 82·1% of *T. orientalis* eggs survived, but only 28·6% of *A. duodenale* eggs; at 27°C. for seven days after 0°C. for two days the corresponding figures were 89·6% and 14%; while at 27°C. for seven days after −5°C. for two days, all *A. duodenale* eggs perished, whereas 89·1% of *T. orientalis* eggs were still viable. J.M.W.

(704d) Nishimura kept *Ascaris lumbricoides* alive for 15 days in human bile, 13 days in physiological saline and 15 days in 5% glucose solution. J.M.W

705—Hiroshima Journal of Medical Sciences.

a. TOKUMO, S., 1956.—" On the histopathological changes of the mesenteric lymph nodes resulting from infection of helminths." **5** (1), 21–43.

706—Holmbergia.

a. GUTIERREZ, R. O., 1956.—" El ganso común *Coscoroba coscoroba* (Molina, 1782), huésped de *Dicheilonema rhea* (Owen, 1843)." **5** (12/13), 227–231. [English summary p. 230.]

(706a) *Dicheilonema rhea*, a common parasite of *Rhea americana*, has been found for the first time in *Coscoroba coscoroba*. It is redescribed; amphids are shown to be present on the head. G.I.P

707—Hoppe-Seyler's Zeitschrift für Physiologische Chemie.

a. ČMELIK, S. & BARTL, Z., 1956.—" Zusammensetzung der Lipide von *Taenia saginata*." **305** (4/6), 170–176.

(707a) Čmelik & Bartl report that the lipids of *Taenia saginata* contain 4·3% phosphatides, 7·7% free fatty acids and that the remainder consists of fatty acid esters. The phosphatides are probably a mixture of lecithin and inositphosphatides: they do not contain cephalin. The contents of the fatty acids and esters are also discussed. A.E.R

708—Hospital. Rio de Janeiro.

*a. PRATA, A., 1956.—" TWSb no tratamento da esquistossomose mansônica. Observações em 42 casos." **50** (2), 259–266. [English summary.]

*b. BOGLIOLO, L., 1956.—" Terceira contribuição ao conhecimento do quadro anatômico do fígado na esquistossomose mansônica hépato-esplênica: o comportamento da artéria hepática." **50**, 485.

709—Idia. Buenos Aires.

a. MORENO, A. F., 1956.—" Nemátodos de la papa en el Valle de Río Negro." No. 106/108 p. 57.

b. MORENO, A. F., 1956.—" Nemátodo en prímula." No. 106/108, pp. 57–58.

c. MORENO, A. F., 1956.—" Un nemátodo hallado en cultivo de ajos interfiere su exportación." No. 106/108, p. 58.

d. MORENO, A. F. & TURICA, A., 1956.—" Resistencia de forestales del Delta al nemátodo parásito de sus raíces." No. 106/108, p. 58.

e. MICCIO PERALTA, L. B., 1956.—" Alfalfa resistente al nemátodo del tallo." No. 106/108 pp. 58–59.

(709a) A search for nematodes in various localities of the valley of the Rio Negro revealed the presence of the root-knot nematode *Meloidogyne incognita* on tubers of the potato variety *Katahdin*. Potato-root eelworm, *Heterodera rostochiensis* was not found. H.R.W

(709b) *Ditylenchus dipsaci* was found to be the cause of damage to primula (*Primula obconica*). Successful control was obtained with trialkyl thiophosphate. H.R.W

(709c) Cysts of *Heterodera rostochiensis* have been found in the soil around the roots of garlic intended for export. Although garlic is not a host the presence of the cysts prejudices its export. M.T.F

(709d) The root-knot nematode *Meloidogyne incognita* causes severe damage to willow poplar in the Delta region. The nematode does not prosper on soil liable to flooding but is severe in plantations on high ground. Hybrid willows are more resistant and, even when infested, grow well on most of the high ground. Resistance to the nematode is found in poplar hybrids, in *Pinus caribaea* and in eucalyptus. M.T.F

(709e) Several lines of lucerne showing resistance to *Ditylenchus dipsaci* have been selected from infested fields and of these some have shown 90% resistance to massive inoculations in the laboratory. Six lines are being used in attempts to produce resistant hybrids giving yields comparable with those of established varieties. M.T.F.

710—Igiene Moderna.

a. BUONOMINI, G., RICCIARDI, M. L. & CARLI, G., 1956.—" Osservazioni sui metodi di arricchimento per la ricerca nelle feci di uova di elminti. Proposta di una modificazione del metodo di Ritchie." **49** (11/12), 971–982. [English, French, German & Esperanto summaries pp. 981–982.]

(710a) Buonomini *et al.* compared the efficacy of the salt flotation technique of Fülleborn & Willis, the zinc sulphate centrifugal flotation technique of Faust, and the centrifugal sedimentation method of Ritchie, in respect of the recovery of helminth eggs from faeces. They concluded that the Faust technique was inferior to the other two. It is suggested that the speed, simplicity and reliability of the Ritchie technique may be improved by omission of the treatment with 10% formalin and the use of tap-water instead of physiological salt solution for preparing the faecal suspension. J.M.W.

711—Igiene e Sanità Pubblica.

a. MONASTRA, A., 1956.—" Le infestazioni da elminti nell'uomo. Considerazioni e proposte." **12** (1/2), 23–29. [English, French & German summaries p. 23.]
b. TRONO, L. DEL, 1956.—" Le elmintiasi intestinali nella popolazione infantile del comune di Fondi (Latina)." **12** (5/6), 298–304. [English, French & German summaries p. 298.]
c. NUZZOLILLO, L., 1956.—" Richerche sulla diffusione delle parassitosi intestinali. (Indagini sui degenti nell'Istituto Psichiatrico Provinciale di Reggio Emilia." **12** (7/8), 418–437. [English, French & German summaries pp. 418–419.]

(711b) Trono examined the stools of 1,102 children up to 14 years of age; *Hymenolepis nana* occurred in 10·25%, *Trichuris trichiura* in 5·98%, *Ascaris lumbricoides* in 4·71%, *Ancylostoma duodenale* in 2·35% and *Enterobius vermicularis* in 0·18%. Mixed infections were found in 6·43% of the positive cases. Only one child under two years old was infected and he harboured *Ascaris lumbricoides*. The need for prophylaxis is stressed. S.W.

(711c) Nuzzolillo examined, for parasites, the faeces of 1,526 patients in a mental hospital. *Trichuris trichiura* was the commonest helminth found, occurring in 150 persons. The results are considered in relation to the age of the patient, the distribution throughout the various hospital departments and the date of the patient's admission and the author concludes that the hospital itself must be considered as a source of infection. S.W.

712—Illinois Medical Journal.

a. STULL, J. D., 1956.—" Parasitic diarrhea." **109** (3), 119–121.

713—Indian Journal of Medical Sciences.

a. REDDY, D. J., RAO, T. S., GUPTA, K. G. & KOTHANDARAMIAH, K., 1956.—" Cysticercosis. A case report." **10** (5), 389–390.
b. OJHA, K. N., 1956.—" Effect of oral sodium fluoride therapy in cases of filariasis and its effect on the serum calcium level. Preliminary report." **10** (8), 619–624.
c. REDDY, D. B., SUBRAMANYAM, N. T., REDDY, C. R. R. M., BHASKAR, G. R. & RAO, V. K., 1956.—" Silent *Cysticercus cellulosae* of brain. Report of two cases." **10** (12), 964–966.

(713b) Ojha gave orally one teaspoonful of 0·1% sodium fluoride solution diluted in 10 to 12 oz. of water t.d.s. to groups of cases of filarial elephantiasis, lymphangitis and lymphadenitis. In early cases of elephantiasis significant improvement was observed, while in cases of long duration also there was benefit with partial reduction in swelling. Fall in serum

calcium level was observed in cases of elephantiasis, and the necessity of its estimation during fluoride therapy is stressed. The possible role of serum calcium as a factor in the development of filarial manifestations is discussed. No toxic symptoms resulted from the administration of sodium fluoride in the dosages used. J.M.W.

714—Indian Journal of Radiology.

a. AGGARWAL, M. L., 1956.—" Hydatid disease of the lung." **10** (1), 10–17.

715—Iowa Veterinarian.

a. TURK, R. D., 1956.—" Clinical parasitic gastroenteritis of cattle." **27** (6), 11–13. [Discussion p. 13.]

(715a) Turk points out that parasitic gastro-enteritis in cattle is becoming of increasing importance in the U.S.A. on account of the increasing trend to livestock farming, the marked shift to better bred and more susceptible cattle, and the shift of cattle from one area to another during the last few dry years. He considers the various genera of nematodes involved, and the effect upon each of them of the standard anthelmintics. Alternate treatments of phenothiazine and normal butyl chloride or copper sulphate-nicotine sulphate mixture will produce more favourable results in mixed infections than any one drug alone. Removal of infected animals from contaminated areas, good nutrition, good nursing and institution of measures to minimize the risk of reinfection are essential. J.M.W.

716—Istanbul Üniversitesi Tıp Fakültesi Mecmuası.

a. GÜVENC, N., 1956.—" Bir bilharziasis vak'ası." [Case of bilharziasis.] **19** (2), 211–214. [French summary p. 214.]

717—Izvestiya Akademii Nauk Kazakhskoi SSR. Seriya Fiziologii i Meditsini.

a. KUZMICHEV, V. Y. & FEDOROVA, E. I., 1956.—[Epidemiology and helminth fauna in the population of Central Kazakhstan.] Year 1956, No. 7, pp. 85–98. [In Russian.]
b. KUZMICHEV, V. Y., 1956.—[Ancylostomiasis in Southern Kazakhstan.] Year 1956, No. 7, pp. 99–106. [In Russian.]
c. KUZMICHEV, V. Y., 1956.—[Experimental observations on the development of *Ancylostoma* eggs in lead mines.] Year 1956, No. 7, pp. 107–111. [In Russian.]
d. KUZMICHEV, V. Y. & FEDOROVA, E. I., 1956.—[Possible development of helminth infections in the mines of Dzhezkazgan.] Year 1956, No. 7, pp. 112–115. [In Russian.]

(717a) The authors report for the period 1950 to 1954 on the occurrence of helminth infections among the population in the area of Karaganda (5·7% infected) and Lake Balkhash (10% infected). The infections (*Hymenolepis*, *Taenia*, *Echinococcus*, *Diphyllobothrium*, *Ascaris*, *Trichuris*, *Enterobius*, *Ancylostoma*, *Opisthorchis* and trichostrongylids) are studied under towns and districts, and under age and sex groups; their epidemiology is also discussed. G.I.P.

(717b) In Southern Kazakhstan, originally free of ancylostomiasis, centres of infection have appeared with the entry of migrants from Georgia. Kuzmichev has shown however, that the soil climatic conditions in the area are unfavourable for the development of ancylostomid and other geohelminth larvae (soil temperatures of up to 49·6°C. were reached in April and May with a humidity of 8%) and that infections brought in by the migrants have been decreasing over the years 1950 to 1955 in conjunction with treatment. G.I.P.

(717c) *Ancylostoma* eggs in faeces were mixed with crude rock, with lead ore and, as controls, with coal and sand, and were placed in glass cylinders at temperatures of 17°C. to 25°C. and 95% humidity in various places in the mine. Infective larvae were obtained in all the series showing that lead mines, similarly to coal mines, favour the development of *Ancylostoma* under suitable conditions of temperature and humidity. G.I.P.

(717d) The temperature in the mines of Dzhezkazgan was in the region of 10°C. to 12°C., too low for the development of eggs and larvae of ancylostomids and some other geohelminths. These particular mines do not therefore represent a possible infection source for these infections. G.I.P.

718—Izvestiya Akademii Nauk Turkmenskoi SSR.

*a. GLAVATSKIKH, V. A., 1956.—[Control of helminths in horses by pasture maintenance and phenothiazine treatment.] Year 1956, No. 2, pp. 66–68. [In Russian.]

*b. LAPSHINA, E. I., 1956.—[Survival of helminth ova in Nebit-Dag soils and composted refuse.] Year 1956, No. 2, pp. 74–75. [In Russian.]

719—Jornal do Médico. Oporto.

a. MENDES DE VASCONCELOS, J., 1956.—" Ancilostomíase em S. Pedro da Cova." **30** (694), 67–73.

720—Jornal de Pediatria. Rio de Janeiro.

*a. MOREIRA, E., 1956.—" Verminoses, formas clínicas." **21** (11/12), 453–462.

*b. WAINSTÓK, D. & WAINSTÓK, E., 1956.—" Necatorose na infância; 8 casos observados no Instituto Fernandes Figueira." **21** (11/12), 463–472.

721—Jornal da Sociedade das Ciências Médicas de Lisboa.

*a. LEITE, A. S. & RÉ, L., 1956.—" Resultados duma campanha de prospecção da oncocercose no Congo Português." **120** (9), 505–513.

722—Journal of the Alabama Academy of Science.

a. SLEDGE, E. B., 1956.—" Pathogenicity of the spiral nematode, *Helicotylenchus nannus* Steiner, 1945, in relation to selected varieties of corn." [Abstract of paper presented at the 1956 Annual Meeting of the Alabama Academy of Science.] **28**, 123.

(722a) When six maize varieties were experimentally inoculated with *Helicotylenchus nannus*, the worms multiplied to varying degrees but caused little damage, the symptoms being initial stunting and, at the higher inoculum levels, some root necrosis. Feeding of the nematodes, usually on root hairs but also on primary and secondary roots, was observed in micro-observation chambers. The worms failed to survive when inoculated into cultures of three soil fungi or into pots of soil without plants. R.D.W.

723—Journal of the American Dietetic Association.

a. BROWN, E. L., 1956.—" Handling pork to prevent trichinosis." **32** (9), 802–806.

724—Journal of the American Medical Association.

a. BROWN, H. W., CHAN, K. F. & YOLKEN, H., 1956.—" Efficacy of promethazine and pyrathiazine against enterobiasis." **162** (11), 1049–1051.

(724a) A single dose of 100 mg. or 125 mg. of promethazine hydrochloride administered at bedtime to 15 children (weighing 27 to 52 lb.) cured *Enterobius vermicularis* infections in 33%. Extreme drowsiness was experienced by 12 of the children and three became restless. Similar doses of pyrathiazine hydrochloride cured only two out of ten children. Both the compounds, even in large doses, were ineffective against *Syphacia obvelata* and pinworms of mice. G.I.P.

725—Journal of Bone and Joint Surgery. British Volume.

a. MILLS, T. J., 1956.—" Paraplegia due to hydatid disease." **38**-B (4), 884–891.

726—Journal of Diseases of Children.

a. KARPINSKI, Jr., F. E., EVERTS-SUAREZ, E. A. & SAWITZ, W. G., 1956.—" Larval granulomatosis (visceral larva migrans)." **92** (1), 34–40.

(726a) The case histories of visceral larva migrans in two children aged under three years are described. In both, *Toxocara* larvae were identified on liver biopsy and in one case a pet kitten was incriminated as the origin of the infection. The pathogenicity and epidemiology of the syndrome are discussed and the term "larval granulomatosis." is proposed for use in pathological terminology. G.I.P.

727—Journal of the Egyptian Public Health Association.

a. SALEM, H. H., 1956.—" Tartar emetic toxicity in bilharzial therapy treated with oxyphenonium bromide (antrenyl bromide)." **31** (3), 85–98.

(727a) Salem found that the administration of 2 mg. antrenyl (oxyphenonium bromide—a synthetic anticholinergic quaternary ammonium compound) intravenously by mixing it with the freshly prepared solution of tartar emetic ameliorated the immediate toxic symptoms characteristic of tartar emetic therapy, particularly cough, nausea, vomiting and giddiness. It was then possible to give a higher total therapeutic dose (30 grains instead of 22·5 grains), and to complete the course of 15 injections in 15 days instead of 30 days. J.M.W.

728—Journal of the Faculty of Medicine of Baghdad, Iraq.

a. ZAHAWI, S. & SHUKRI, N., 1956.—" Ectopic schistosomiasis and bilharzial myocarditis." **20** (3/4), 56–60.

b. OTHMAN, I. A., 1956.—" Case report of pulmonary bilharziasis caused by *Schistosoma haematobium*." **20** (3/4), 68–70.

729—Journal of the Formosan Medical Association.

a. HSIEH, H. C., TSENG, P. T. & CHUANG, C. H., 1956.—" Larval filariae found in *Anopheles* mosquitoes in Southern Taiwan (Formosa)." **55** (7), 320–325. [Chinese summary p. 325.]

b. HSIEH, H. C. & CHUANG, C. H., 1956.—" A note on the periodic appearance of microfilaria of *Dirofilaria immitis* Leidy in the peripheral blood of an indigenous dog in Taiwan (Formosa)." **55** (10), 502–504. [Chinese summary p. 504.]

(729a) Over a period of three years, 43,188 specimens of *Anopheles* were examined and larval filariae found in 42 *A. hyrcanus sinensis*, seven *A. minimus* and one *A. tessellatus*. The mosquitoes came from cow-sheds (chiefly) and houses in several districts of Ping-Tong prefecture. The data suggest that infection of the mosquitoes occurs throughout the year with two probable peaks in April-May and November-January. The filariae found were not morphologically like those of *Wuchereria* sp. G.I.P.

(729b) Out of 75 dogs examined, *Dirofilaria immitis* was found in three indigenous dogs from Central Taiwan and one dog imported from Italy. A detailed study of one of the local dogs showed that the microfilariae were released in the peripheral blood both during the day and during the night. The lowest density occurred at midday, while during the night unexpected recessions occurred at midnight and at 4.00 a.m. and the nocturnal peak was longer than that reported by Webber & Hawking (1955) and Itagaki (1943). G.I.P.

730—Journal of the International College of Surgeons.

a. RECIO, P. M., 1956.—" Schistosomiasis from the proctologist's point of view." **26** (1, Part 1), 87–102. [French, German, Italian & Spanish summaries pp. 99–100.]

b. WANG, S. K. & SHIH, C. J., 1956.—" Cerebral paragonimiasis. Report of three cases." **26** (3), 312–322. [French, German, Italian & Portuguese summaries pp. 321–322.]

731—Journal Médical Libanais.

a. WATSON, J. M., BALIKIAN, G. & KERIM, R. A., 1956.—" The effect of some enviromental factors on the incidence of intestinal parasitism in Lebanon." **9** (3), 272–306. [French summary pp. 299–300.]

(731a) Watson *et al.* report the results of a survey of variation in the incidence of infection with intestinal parasites in the Republic of Lebanon with special reference to the effect of environmental factors. Helminthic infection was more common in the north of the country. It is pointed out that apparent increase in incidence compared with previous surveys is probably due to improved laboratory technique of faecal examination. With the exception of ascariasis and hymenolepiasis, helminthic infection tended to decrease with increasing altitude. Ascariasis and trichuriasis were more common in areas with a southern exposure, whereas strongyloidiasis was confined almost entirely to localities with a western exposure. Helminthic infection was relatively rare in limestone and sandstone areas. Drinking water was not a significant factor in the spread of helminthiasis. Ancylostomiasis and strongyloidiasis were markedly less frequent where adequate sanitary facilities were available. No clear pattern emerged in relation to the different methods of irrigation, except that ascariasis was more frequent in areas where the water was distributed through open conduits. Ascariasis and trichuriasis were more frequent where garbage was used as a fertilizer, while strongyloidiasis and trichostrongylosis were commonly associated with the use of camel dung. Lower incidence of helminthic infections in general was not observed in connection with the exclusive use of artificial fertilizers. Ancylostomiasis was confined to the coastal plain and was mainly associated with orange and pomegranate groves rather than with banana cultivation. Farming communities showed a higher incidence of ascariasis, but there was no other occupational correlation. Intestinal helminthiasis contributed significantly to ill health in communities with a low general standard of health. Ancylostomiasis was significantly less frequent in districts with resident medical practitioners. With the exception of tapeworm infections, incidence of helminth infections was lower than the world average. J.M.W.

732—Journal of the Medical Society of New Jersey.

a. SNAPE, W. J., NARDI, M. & BARSE, F., 1956.—" Persistent mental aberration associated with trichinosis. A case report." **53** (6), 309–311.

733—Journal of Mental Science. London.

a. SUTHERLAND, J. M. & ROSIE, J. M., 1956.—" Cerebral cysticercosis with mental symptoms." **102** (427), 343–344.

734—Journal of Pharmacy and Pharmacology. London.

a. COCKER, W. & McMURRY, T. B. H., 1956.—" The chemistry of santonin. Part II. Preparation of some derivatives with possible anthelmintic activity." **8** (12), 1097–1102. [Discussion p. 1102.]

735—Journal of the Philippine Medical Association.

a. AFRICA-JULIANO, L. & CORDERO, L. S., 1956.—" Multiple intestinal parasitism with severe anemia. (A report of two cases)." **32** (11), 687–689.

(735a) The authors describe two cases of severe anaemia in children, which were associated with multiple infections with *Schistosoma japonicum*, *Ascaris*, *Trichuris* and hookworm. S.W.

736—Journal of Postgraduate Medicine. Bombay.

a. DAFTARY, V. G. & BHENDE, Y. M., 1956.—" Anemia in ankylostomiasis." **2** (1), 44–50.

737—Journal of the Tennessee Academy of Science.

a. COX, D. D., CIORDIA, H. & JONES, A. W., 1956.—" Variations in *Hymenolepis serrula* Oswald, 1951, (Cestoda: Hymenolepididae), a cestode from the smoky shrew, *Sorex fumeus* Miller, 1895, with special reference to three geographical areas." **31** (4), 287–299.

(737a) Cox *et al.* have examined the morphological variation in specimens of *Hymenolepis serrula* from three *Sorex fumeus*, each from a different geographical area. They tabulate the dimensions of various organs and discuss these and the variations observed in the numbers of hooks which were very remarkable, from six to eleven hooks being present among specimens from all three areas. One cestode was observed with a cirrus in the vagina of another, indicating that cross fertilization does occur. As there is considerable overlapping in the range of variation of all three groups the authors are of the opinion that they should be considered as populations of *H. serrula* rather than distinct subspecies or species. Oswald's original description of *H. serrula* is emended. S.W.

738—Journal d'Urologie Médicale et Chirurgicale.

a. KANTOR, S., 1956.—" Sur un aspect radiologique de la bilharziose urinaire." **62** (4/5), 292–295.
b. MAKAR, N., 1956.—" Sur la lithiase uretérale bilharzienne." **62** (12), 761–767.

739—Journal of Urology.

a. SAYEGH, E. S. & DIMMETTE, R. M., 1956.—" The fibrotic contracted urinary bladder associated with schistosomiasis and chronic ulceration. A clinicopathological study including treatment." **75** (4), 671–679.
b. DIMMETTE, R. M., SPROAT, H. F. & SAYEGH, E. S., 1956.—" The classification of carcinoma of the urinary bladder associated with schistosomiasis and metaplasia." **75** (4), 680–686.
c. ASCHNER, P. W. & GECHMAN, E., 1956.—" Echinococcus renal cyst cured by partial nephrectomy." **76** (1), 23–30.

740—Karakulevodstvo i Zverovodstvo.

a. DUBNITSKI, A. A., 1956.—[Prevent the occurrence of trichinelliasis at State mink farms.] **9** (3), 60. [In Russian.]
b. MARTINOV, V. F., 1956.—[Control of *Opisthorchis* infestation in silver-black foxes.] **9** (5), 44–45. [In Russian.]
c. DUBNITSKI, A. A., 1956.—[The means by which blue foxes are infested with *Uncinaria stenocephala*.] **9** (5), 45–46. [In Russian.]
d. MIRONOV, A. N., MALISHEV, K. G. & KROVYAKOV, V. I., 1956.—[Susceptibility of fur-bearing animals to trichinelliasis.] **9** (6), 48. [In Russian.]
e. DUBNITSKI, A. A. & PETUKHOVA, V. V., 1956.—[Treatment of *Toxascaris* infestation in blue foxes with chenopodium oil.] **9** (6), 60–61. [In Russian.]

(740a) In order to prevent the possibility of infection of mink with *Trichinella spiralis* Dubnitski recommends that pig products should be fed only if thoroughly examined for *Trichinella*. In one mink-breeding farm 8 out of 28 mink were found post mortem to be infected with *Trichinella*. C.R.

(740b) Feeding silver foxes with cooked fish led to a drop in the percentage of infection with *Opisthorchis felineus* from 41·2% in 1949 to 1·3% in 1953. Martinov recommends hexachlorethane (2–3 gm. per animal *per os*) for the treatment of opisthorchiasis in silver foxes. Feeding cooked fish also affected the quality of fur, fertility and chances of survival of young stock. C.R.

(740c) Dubnitski found the arctic fox naturally infected with *Uncinaria stenocephala*. Successful experimental infections were established by administering the infective larvae either in food or through the skin. Eggs were found as early as 14 days after infection using either method. Keeping animals on wire-netting floors reduces the infection to a minimum. C.R.

(740d) The authors fed a silver fox with 150 grammes of rabbit flesh containing larvae of *Trichinella spiralis*. At autopsy 112 days later there were no encysted larvae in the muscles, but adults were present in the intestine. Two other silver foxes and one arctic fox killed 66 days after infection in the same way were found to have encysted larvae in the muscles. The authors recommend that meat before feeding should be examined for *Trichinella*. If this is not possible it should be cooked. Control of rats and mice on the breeding farms is essential and the cadavers of killed fur-bearing animals should be examined for *Trichinella* if they are going to be fed to pigs or, if examination is not possible, they should be boiled first. C.R.

(740e) The authors recommend the treatment of *Toxascaris* infection in arctic foxes by gastric intubation of 10 ml. of a 1:20 mixture of oil of chenopodium and castor oil, warmed to 37°C. C.R.

741—Kartofel.

*a. TERESHCHENKO, E. F., 1956.—[Stem nematode of potatoes and its control.] Year 1956, No. 3, pp. 53–55. [In Russian.]
*b. KHIZNYAK, P. A. & EFREMENKO, V. P., 1956.—[On nematode resistance of certain potato varieties.] Year 1956, No. 4, pp. 60–61. [In Russian.]

742—Kasikorn. Bangkok.

a. INTANAI, P., 1956.—[Nematodes.] **29** (2), 177–180. [In Siamese.]

743—Khirurgiya. Moscow.

a. TON-TKHAT-TUNG, KHOANG-SU & NGIEN-VAN-VAN, 1956.—[Acute pancreatic oedema caused by ascariasis.] **32** (5), 35–47. [In Russian.]
b. VANDONSHIN, I. K., 1956.—[Therapeutic effect of lumbar novocaine block in shock caused by perforation of hepatic echinococcal cysts in the abdominal cavity.] **32** (12), 34–38. [In Russian.]

744—Khirurgiya. Sofia.

*a. MIKHAILOV, M., 1956.—[Fourteen-year result of the treatment of pulmonary echinococcosis at the surgical ward of the regional hospital in Ruse.] **9** (4), 341–343. [In Bulgarian.]
*b. CHERNEV, E., 1956.—[Observations on cholelithiasis consecutive to liver echinococcosis.] **9** (4), 354–357. [In Bulgarian.]
*c. MISHEV, P., 1956.—[A case of pulmonary echinococcosis.] **9** (4), 366–367. [In Bulgarian.]
*d. POPKIROV, S., 1956.—[A case of suppurative echinococcosis of the tibia.] **9** (4), 367–369. [In Bulgarian.]
*e. GOSPODINOV, B. & ANDREEV, I., 1956.—[A case of echinococcosis of the fascia lumbodorsalis and of the glutaeus maximus.] **9** (4), 369–370. [In Bulgarian.]
*f. TOMOV, V., 1956.—[Indications and approach in surgical treatment of unilateral pulmonary echinococcosis with simultaneous hepatic echinococcosis.] **9** (10), 865–869. [In Bulgarian.]

745—Kitakanto Medical Journal.

*a. OTA, H. & SATO, S., 1956.—[On resistance of snails, *Oncomelania nosophora*, against drugs.] **6**, 287. [In Japanese.]
*b. MIZUNO, T., 1956.—[Hookworm ova positivity rate.] **6**, 307. [In Japanese.]
*c. OTA, H., 1956.—[On the treatment of schistosomiasis japonica.] **6**, 466. [In Japanese.]

746—Klinicheskaya Meditsina. Moscow.

a. DUBNIKOV, P. F. & KUZMINA, N. I., 1956.—[Paragonimiasis of the lungs.] **34** (12), 67–68. [In Russian.]
b. CHEPRAKOV, N. N. & SHNIRELMAN, A. I., 1956.—[Paragonimiasis of the lungs.] **34** (12), 69–71. [In Russian.]

747—Konevodstvo.

a. VELICHKIN, P. & MOLOKANOV, N., 1956.—[The control of equine verminoses with small doses of phenothiazine.] **26** (7), 20–21. [In Russian.]

(747a) The authors recommend the addition of 2 grammes of phenothiazine daily to the summer corn feed of horses of one-and-a-half years and older. They claim that this helps to prevent the development of strongyles. C.R.

748—Kühn-Archiv.

a. GÜNTHER, W., 1956.—" Über den Verlauf der Eiausscheidung bei Magen-Darm-Nematoden des Schafes und die Einwirkung von Phenothiazin auf Ihn." **70** (4), 563–564.

(748a) Günther has studied the incidence of gastro-intestinal nematodes in four flocks of sheep over a period of two years. He finds no correlation between the numbers of ova and larvae in a faecal specimen. Egg count curves divide into two distinct periods, summer/autumn and winter/spring, in each of which the egg count increases throughout the period. Changes in environment of the sheep do not seem to influence the egg count. All flocks were infected with *Haemonchus contortus*, *Ostertagia* sp. and strongylids, but *Nematodirus* sp. was only present in one flock. Third-stage larvae of *Chabertia* and *Oesophagostomum* could not be differentiated. Treatment with phenothiazine in fractionated dosage was effective. A.E.F.

749—Kurume Medical Journal.

a. WATANABE, H., 1956.—" The clinical and pathohistological study on the schistosomiasis patients diagnosed by liver biopsy." **3** (3), 169–183.

(749a) Watanabe classifies the chief complaints associated with human schistosomiasis and, comparing methods of diagnosis, concludes that liver biopsy detects the infection eight to nine times more frequently than faecal examination and is not dangerous. G.I.P.

750—Kyushu Agricultural Research.

a. NAGANO, R. & ITO, S., 1956.—[The efficacy of phenothiazine in removing ascarids of swine.] No. 17, pp. 143–145. [In Japanese.]

751—Landbonyt. Copenhagen.

*a. LINDHARDT, K., 1956.—[Transmission of nematodes on plants.] **10**, 370–372. [In Danish.]
*b. LINDHARDT, K., 1956.—[*Ditylenchus dipsaci*; a danger to onion growing.] **10**, 557–559. [In Danish.]

752—Latvijas PSR Zinatņu Akademijas Vestis.

a. BLYUGER, A. F., GAGAINE, A. E., DAKHOVKER, S. E., MINTSENGOF, L. A., RATENBERG, N. S. & CHARNI, S. D., 1956.—[Experiment in the treatment of ascariasis with piperazine adipate.] No. 102, pp. 93–98. [In Russian.]
b. SLOKA, Y., 1956.—[Data on Hirudinea of the Latvian SSR.] No. 104, pp. 89–93. [In Russian: Latvian summary p. 93.]
c. VAIVARINA, H. & VIKSNE, V., 1956.—" *Fasciola hepatica* starpsaimnieka *Galba truncatula* izplatība Latvijas PSR." No. 105, pp. 67–72. [Russian summary pp. 71–72.]

(752a) The maximum dose of piperazine adipate tolerated by white mice when intubated into the stomach was 6,000 mg. per kg. body-weight. The anthelmintic, when injected intravenously at 50 mg. per kg., was shown (on rabbits, cats and dogs) to lower the blood pressure temporarily with a corresponding increase in respiration and (on portions of rabbit intestine *in situ*) to stimulate the tonus of the intestine occasionally considerably increasing its contractions. This effect occurred also in animals which had been given atropine and was therefore direct. In doses of 3 gm. per day for three days, piperazine adipate proved effective against ascariasis in man and its low toxicity and the fact that no laxatives are needed recommend it in cases convalescing from other infective intestinal diseases (e.g. dysentery). G.I.P.

(752b) Sloka lists from water reservoirs in Latvia the following leeches noting where they were found: *Piscicola geometra*, *Hemiclepsis marginata*, *Protoclepsis tesselata*, *P. maculosa*, *Haemanteria costata*, *Glossiphonia octoserialis*, *G. complanata*, *G. heteroclita*, *Helobdella stagnalis*, *Haemopis sanguisuga*, *Hirudo medicinalis*, *Herpobdella octoculata*, *H. testacea*, *H.* var. *nigricollis* and *H. lineata*. G.I.P.

(752c) *Galba truncatula* was found to occur throughout Latvia (contrary to previous reports in the literature) explaining the wide distribution of fascioliasis in that country. The chief centres of infection were meadows and pastures in lowland areas along rivers and lakes. Here the first infected snails appeared about the middle of June and the highest rate of infection (85·3%) was observed in September. On other types of pastures the occurrence of snails and flukes was not focal. G.I.P.

753—Lille Chirurgical.

a. DECOULX, P., RAZEMON, J. P. & KOMAR, 1956.—" Kyste hydatique du tibia." **11** (4), 233–237.

754—Lyon Médical.

a. BERNHEIM, ROMAN, E., MOURIQUAND, C. & LARBRE, F., 1956.—" A propos de deux cas infantiles de distomatose à *Fasciola hepatica*." **88** (32), 101–114.

755—M.S.U. Veterinarian. Michigan State University.

a. CLARK, D. T. & BELDING, S. A., 1956.—" Rhabditic dermatitis in a dog in Michigan." **17** (1), 48, 53.

(755a) Clark & Belding report a case of severe and extensive dermatitis of the right thigh of a nursing pointer bitch caused by larvae of *Rhabditis strongyloides*. Four previous cases of dermatitis caused by *Rhabditis* have been reported in dogs, and two in cattle. Caking of infested soil or excrement on the skin appears to be the major contributory factor in this condition. J.M.W.

756—Magyar Állatorvosok Lapja.

a. BORAY, J., 1956.—" Juhok heveny májmételykórjának gyógykezelése bőr alá fecskendezett széntetrakloriddal." [Treatment of acute fascioliasis of sheep by subcutaneous injections of carbon tetrachloride.] **11** (2), 40–42. [English & Russian summaries p. 42.]
b. EGYED, M. & HOLLÓ, F., 1956.—" A toluol és a Gastin orsóféregellenes hatásának vizsgálata." [Investigation of toluene and Gastin for effectiveness in ascaridiasis.] **11** (4), 115–119. [English & Russian summaries p. 119.]
c. NEMESÉRI, L. & HÓDOSY, J., 1956.—" Tyúkfélék orsófergességének kezelése benzinnel." **11** (4), 120–121. [English & Russian summaries p. 121.]
d. PAPP, L., 1956.—" Lovak orsófergességének kezelése hánytató borkővel." [Treatment of ascarids in horses with potassium antimony tartrate.] **11** (4), 143.
e. TÖLGYESI, G., 1956.—" A rézszulfát viselkedése a terepen történő csigairtás során." **11** (5), 167–171. [English & Russian summaries p. 171.]
f. SZÉKY, A. & NEMESÉRI, L., 1956.—" Adatok a trichinellosis kórszövettanához kísérletes vizsgálatok alapján II." [Pathological histology of trichinelliasis in experimentally infected white rats.] **11** (5), 178–179. [English & Russian summaries p. 179.]
g. BOKORI, J., 1956.—" *Spirocerca lupi* okozta féregcsomók miatt létrejött nyelőcsőszűkület és következményes gyomorkitágulás kutyában." [Oesophageal stricture and consequent dilation of the stomach in dogs caused by verminous nodules of *Spirocerca lupi*.] **11** (5), 189–190.
h. EGYED, N. & NEMESÉRI, L., 1956.—" Juhok májmételykórjának orvoslása parenterálisan alkalmazott széntetrakloriddal." [Treatment of fascioliasis in sheep by parenteral injection of carbon tetrachloride.] **11** (6), 201–204. [English & Russian summaries p. 204.]
i. KOVÁCS, F. & BORAY, J., 1956.—" Szoptatós kocák hyostrongylosisa." **11** (10/12), 386–388. [English & Russian summaries p. 388.]

(756a) [The information contained in this paper has also appeared in English in *Acta Veterinaria, Budapest*, 1956, **6**, 469–473. For abstract see Helm. Abs., **25**, No. 333i.]

(756b) [This is essentially the same as a paper published by the authors in English in *Acta Veterinaria, Budapest*, 1956, **6**, 419–427. For abstract see Helm. Abs., **25**, No. 333g.]

(756c) Benzine, in doses of 2 ml. per kg. body-weight, is effective against *Ascaridia* infection in fowls and is without toxic or disagreeable side effects. The drug may be intubated orally into an empty crop or injected through the skin into the crop when half full. The treatment can be safely repeated after one to two weeks. G.I.P.

(756e) Tölgyesi has investigated, in connection with snail eradication, the behaviour of copper sulphate in natural waters. He has studied the deposition and dissolution of copper salt precipitates, the influence of acidification on dissolution, the absorption of copper sulphate by plants and soil, and changes in the concentration along a river when the salt has been applied near its source. G.I.P.

(756f) [This is essentially the same as a paper published by Széky & Nemeséri in German in *Acta Veterinaria, Budapest*, 1956, **6**, 361–372. For abstract see Helm. Abs., **25**, No. 333f.]

(756h) [This paper is essentially the same as one published by the authors in English in *Acta Veterinaria, Budapest*, 1957, **7**, 345–350.]

(756i) *Hyostrongylus rubidus* infection of lactating sows, when associated with a protein deficient diet, produced serious disease and fatty degeneration of the liver leading to heavy losses among the animals. *Oesophagostomum dentatum* infection was also present in some of the animals. Symptoms ceased and the intensity of infection decreased when supplementary animal protein was fed to the animals. Cadmium anthranilate therapy (2·5 gm. daily for three days making a total of 7·5 gm.) was similarly beneficial. G.I.P.

757—Maroc Médical.

a. LISCIA, G., 1956.—" Traitement médical du kyste hydatique par injections de thymol iodé. (Méthode de Cuervo)." **35** (373), 691–692.
b. BERTRAND, J. L. & FAURE, H., 1956.—" Une épidémie localisée de distomatose hépatique et deux cas de distomatose hépatique à manifestations sous-cutanées." **35** (376), 902–913.
c. LALU, P., 1956.—" Le kyste hydatique, maladie marocaine." **35** (377), 945–946.
d. DEKESTER, M., 1956.—" Un cas de distomatose sous-cutanée au Maroc." **35** (377), 975.
e. ROUZAUT, J., 1956.—" De l'intérêt d'une exérèse chirurgicale importante dans un cas d'échinococcose secondaire péritonéale." **35** (377), 990–994.
f. ACQUAVIVA, R., THEVENOT, C. & VERTUT, J., 1956.—" Echinococcose thyroïdienne." **35** (377), 995–996.
g. LAPIERRE, J., 1956.—" Les traitements actuels de l'oxyurose." **35** (378), 1052–1057.
h. GAUD, J. & CHEDECAL, M., 1956.—" Les parasites intestinaux au Maroc." **35** (378), 1058–1064.
i. CHENEBAULT, J., 1956.—" Quelques problèmes actuels de l'hydatidose." **35** (378), 1067–1079.
j. THIODET, J., 1956.—" Les cirrhoses hydatiques." **35** (378), 1080–1086.
k. GAUD, J., 1956.—" Le problème sanitaire posé par la bilharziose au Maroc." **35** (378), 1086–1091.
l. CHENEBAULT, J., 1956.—" Les parasitoses au Maroc dans la pratique pneumologique." **35** (379), 1169–1172.
m. ROLLIER, R., 1956.—" Parasitoses et dermatologie au Maroc." **35** (379), 1173–1187.
n. BRU, P., 1956.—" Les incidences hématologiques des parasitoses." **35** (379), 1188–1211.
o. GARIPUY, M., 1956.—" Aperçu clinique sur les parasitoses digestives (amibiase exceptée)." **35** (379), 1212–1213.
p. ROLLAND, J. L., 1956.—" Les troubles mentaux d'origine parasitaire au Maroc." **35** (379), 1214–1219.
q. GUILHON, J., 1956.—" Propriétés anthelminthiques de la pipérazine." **35** (379), 1223–1228.
r. BELOT, P., 1956.—" Quelques parasitoses animales au Maroc vues par un praticien." **35** (379), 1241–1244.
s. VAYSSE, J. & ZOTTNER, G., 1956.—" Situation sanitaire au Maroc à l'égard des principales maladies parasitaires du bétail." **35** (379), 1245–1253.

t. COUDERT, J., 1956.—" Intérêt des antigènes lyophilisés en parasitologie." **35** (379), 1257–1259.
u. GAUD, J., LAURENT, J. & FAURE, P., 1956.—" Arthropodes vecteurs possibles de maladies au Maroc." **35** (379), 1259–1266.

(757b) Bertrand & Faure describe a local epidemic of fascioliasis in a group of nine workmen in the north of Morocco. Treatment with emetine, combined in some cases with other anthelmintics and antibiotics, appeared to effect a cure in all nine cases. In two other cases, which they report from France, fluke infection was believed to have caused subcutaneous granulomatous nodules in one and erythematous eruptions in the other. Treatment with emetine-notézine caused the disappearance of the lesions. S.W.

(757d) Dekester describes a case of subcutaneous fascioliasis in man in Morocco. Surgical removal of the abdominal lesion and sectioning of the material revealed the presence of an immature *Fasciola hepatica*. S.W.

(757g) Lapierre reviews the drugs which have been used in the treatment of enterobiasis; he concludes that piperazine derivatives, terramycin and tetracyclin are the most efficacious but recommends that the antibiotics should only be used in cases which are resistant to piperazine. S.W.

(757h) Gaud & Chedecal list, annotate and tabulate the incidence of intestinal parasites in man in Morocco from their own observations and published reports. The helminths mentioned are *Ascaris lumbricoides*, *Trichuris trichiura*, *Ancylostoma duodenale*, *Enterobius vermicularis*, *Strongyloides stercoralis*, *Taenia saginata* and *Hymenolepis nana*. S.W.

(757k) Schistosomiasis does not appear to present a serious problem in Morocco. Although it is spread throughout the palm groves on the edge of the Sahara no new focus has been reported since 1941 and the incidence appears to fluctuate widely from year to year. In children the infection rate varies between 10% and 20% and in adults between 7% and 15%. Mass treatment of the population and wide-spread molluscicidal treatment of the irrigation canals are impracticable but Gaud suggests that the construction of bathing pools in the palm groves, which could be treated with copper sulphate, would not only greatly decrease the rate of infection but improve the amenities. S.W.

(757l) Pulmonary hydatid is common in man in Morocco. Chenebault briefly reviews its diagnosis and treatment. Trematodes in the lung are rare but two cases of spontaneous pneumothorax, caused by *Fasciola hepatica*, have been reported; the two cases were in members of the same family. S.W.

(757m) In this account of parasites as causative agents of skin diseases in Morocco, Rollier mentions cutaneous ancylostomiasis, which is not uncommon amongst workers in the phosphate mines, two cases of prurigo nodularis caused by *Taenia saginata*, and *Enterobius* as the cause of pruritus ani and associated conditions. S.W.

(757n) Bru discusses, under various headings, the helminths which parasitize man and their effects on the blood. Those which normally occur only in the intestine provoke little or no eosinophilia or anaemia—with the notable exception of *Diphyllobothrium*. Others, which have a tissue phase or which live in tissues or organs other than the intestine cause eosinophilia, anaemia and other humoral disturbances. The role of filariae in the aetiology of tropical eosinophilia is considered. S.W.

(757o) In this brief, and very general, account Garipuy mentions *Taenia saginata*, *Fasciola hepatica*, *Ascaris*, *Enterobius*, *Trichuris* and *Ancylostoma* together with appropriate measures for their treatment and prophylaxis. S.W.

(757p) In this short account of mental disorders caused by parasites, Rolland refers to cerebral cysticerciasis and hydatidosis and cerebral invasion by *Trichinella* larvae, and to certain

mental disturbances (irritability, confusion, preoccupation, depression etc.) which have been attributed to heavy infections with *Ascaris*, *Ancylostoma*, *Taenia* and *Enterobius*. S.W.

(757q) Guilhon gives a comprehensive review of piperazine as an anthelmintic from the discovery of the antifilarial and ascaricidal properties of one of its derivatives by Hewitt *et al.* in 1947 to recent work on the adipate, carbodithioate and dilaurate which have the advantage of being insoluble or only slightly soluble. S.W.

(757r) Belot, in this general paper, refers to gastro-intestinal nematodes, lungworms, fascioliasis, hydatid, *Spirocerca*, *Echinococcus*, ascarids and *Dipylidium* as affecting domestic animals in Morocco. S.W.

(757s) Vaysse & Zottner discuss in general terms and make recommendations for the treatment and prophylaxis of the common helminths of domestic animals in Morocco—lungworms, gastro-intestinal nematodes, *Fasciola*, *Moniezia*, cysticerci and hydatid in ruminants, *Ascaris*, *Gigantorhynchus* and hydatid in pigs, strongyles and *Parascaris* in horses and *Heterakis* in fowls. The frequency of the various parasites in their hosts and their pathogenic action are tabulated. S.W.

(757t) Coudert describes the preparation of lyophilized antigens and confirms, from six years experimental work, the value of these in the diagnosis of distomiasis (*Fasciola hepatica*), ascariasis and hydatid disease. S.W.

(757u) Gaud *et al.* discuss as potential disease vectors the arthropods found in Morocco. The species are tabulated, together with the principal hosts, frequency, association with man and domesticity. S.W.

758—Marseille Chirurgical.

*a. DOR, J. & MONTAGNIER, 1956.—" Énucléation-capitonnage ou exérèse dans le kyste hydatique du poumon." **8** (2), 217–219.
*b. DOR, J. & REBOUD, E., 1956.—" Sur la rupture broncho-pulmonaire du kyste hydatique du foie." **8** (5), 663–670.

759—Marseille Médical.

a. DOR, J., 1956.—" Diagnostic et traitement du kyste hydatique du poumon." **93** (2), 91–99.

760—Medical Clinics of North America.

a. CULBERTSON, J. T., 1956.—" Chemotherapy of intestinal parasitic infections." **40** (2), 527–539.

(760a) Culbertson reviews the known facts concerning the chemotherapy of helminthic infections. J.M.W.

761—Medical Journal of the Egyptian Armed Forces.

*a. OMAR, H., 1956.—" Treatment of schistosomiasis in recruits with triostam." **2** (2), 30–38.

762—Medicina, Cirurgia, Farmácia. Rio de Janeiro.

a. CARNEIRO, J. F., 1956.—" Síndrome de Löffler recidivante e aneosinofílica num caso de estrongiloidose." No. 241, pp. 213–217.

763—Medicina Internă. Bucharest.

*a. KLEINERMAN, L., BELCHITĂ, A. & PANTZER, M., 1956.—" Sindromul anginos şi modificările electrocardiografice într-un caz de trichinoză." **8** (8), 1230–1232.

764—Medicina. Revista Mexicana.

a. BIAGI F., F., 1956.—" Observaciones sobre mansonelosis en la Península de Yucatán. I. Frecuencia." **36** (760), 521–526.
b. BIAGI F., F., 1956.—" Observaciones sobre mansonelosis en la Península de Yucatán. II. Manifestaciones clínicas, reacciones intradérmicas y de precipitación." **36** (761), 545–548.

(764a) Infection with *Mansonella ozzardi* was found in 61·1% of 296 persons (children and adults) from the State of Campeche, Mexico. Most of these people had resided in their home-towns or villages all their lives. The infection was present in 90%–100% of the persons over 50 years of age but was rare in individuals who did not work in the fields. M.MCK.

(764b) No clinical manifestations attributable to *Mansonella ozzardi* infection were observed in 21 persons with the microfilariae in the blood. Seventeen persons infected with *M. ozzardi* were given subcutaneous injections of antigen of *Dirofilaria immitis* at a concentration of 1:8,000 and only 53% were weakly positive. The sera of five persons infected with *M. ozzardi* gave unreliable results in the precipitin test with extracts of *D. immitis* and negative results when extracts of six non-filarial species of worms were used. M.MCK.

765—Medlemsblad for den Danske Dyrlaegeforening.

a. PETERSEN, W. W., 1956.—"Tyndtarmsinvagination i relation til spolorm hos svin." **39** (18), 507–509.

(765a) Petersen describes a case of intussusception of the small intestine in a pig, caused by ascarids. The pig, which had shown no clinical symptoms, had just been slaughtered but would undoubtedly have died very soon in any case. A.E.F.

766—Mémoires de l'Académie de Chirurgie. Paris.

a. MIALARET, J., 1956.—" Echinococcose alvéolaire du foie." **82** (8/9), 253–255.
b. DEMIRLEAU, J., 1956.—" Traitement des kystes hydatiques du foie ouverts dans les bronches ou la plèvre." **82** (14/15), 470–473.

767—Memorias. Asociación de Técnicos Azucareros de Cuba.

a. PINEDA, F., 1956.—" Nemátodos parasíticos en la caña de azúcar." XXX Conferencia Anual, pp. 61–81.

(767a) Pineda reviews, from the published literature, the nematodes that have been reported as associates of sugar-cane. These are *Radopholus similis*, *Tylenchorhynchus martini*, *Anguina spermophaga* [Steiner, 1937 and not n.sp. as it appears in this paper], *Hoplolaimus coronatus*, *Meloidogyne javanica* and *Aphelenchoides heterophallus*. He states that Steiner has found the following nematodes on sugar-cane in Puerto Rico—*Pratylenchus* spp., *Helicotylenchus* spp., *Hoplolaimus* spp., *Ditylenchus* spp., *Tylenchus* spp., *Tylenchorhynchus*, *Psilenchus*, *Rotylenchus*, *Criconemoides*, *Aphelenchus*, *Aphelenchoides*, *Longidorus* and *Xiphinema*. There are 33 papers listed as references. J.B.G.

768—Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey".

a. PÉREZ VIGUERAS, I., 1956.—" Contribución al conocimiento de la fauna helmintológica cubana." [Continuation.] **23** (1), 1–36.

(768a) Vigueras continues his study of the helminth fauna of Cuba. The following trematodes are redescribed and illustrated: *Notocotylus lopez-neyrai*, *Echinostoma gracile*, *E. americana*, *E. revolutum*, *Prionosoma pricei*, *P. serratum*, *P. malacophilum*, *Nephrostomum robustum*, *Euparyphium capitaneum*, *Echinochasmus megatyphlus*, *Parorchis acanthus*, *Ptychogonimus megastoma*, *Haplosplanchnus acutus*, *Tetrochetus proctocolus* and *Prosogonotrema bilabiatum*. *Neorenifer adenodermis* is transferred to *Ochetosoma* as a new combination. The

species of *Acanthochasmus* are listed and two new forms, *A. loossi* and *A. americanus*, both from the intestine of *Crocodylus acutus* are described and figured; these two may be distinguished from one another by the form of the pharynx, which in *A. americanus* is a direct continuation of the oral sucker, by the position of the receptaculum seminis, which lies between the ovary and the anterior testis in *A. americanus* and in front of the ovary in *A. loossi*, by the vitelline follicles, which are much larger in *A. americanus* than in *A. loossi*, and by the number of oral spines, 20 and 24 respectively: neither of these two species is differentiated from other species parasitic in reptiles. *Hapladena megatyphlon* n.sp., from the intestine of *Pomacanthus arcuatus*, is described, drawn and distinguished from the most closely related species, *H. leptotelea*, by being twice as large, by having a larger pharynx and by the regular oval shape of the ovary and testis. S.W.

769—Memorie del Museo Civico di Storia Naturale di Verona.

a. SCIACCHITANO, I., 1956.—" Ricerche zoologiche sui Monti Sibillini. VII. Irudinei e gordii dei Monti Sibillini." **5**, 189–190.

(769a) The author has found *Haemopis sanguisuga*, *Erpobdella octoculata* f. *pallida* and *Gordionus violaceus* in the Monti Sibillini and notes their distribution in Italy. G.I.P.

770—Metabolism. Clinical and Experimental.

a. CROWLEY, L. V., POLLACK, H. & BROCKETT, Jr., J. E., 1956.—" Studies on nutrition in the Far East. XII. The relation of intensity of hookworm infestation to changes in body weight and clinical signs of nutritional deficiency." **5** (3), 297–301.
b. FRICK, L. P., MOON, A. P. & LIN, S. S., 1956.—" Parasitologic studies in the Far East. XV. A preliminary survey for parasitism in southern Formosa." **5** (3), 302–308.

(770b) In this survey of the parasites of 1,044 Chinese Nationalist soldiers and 725 Taiwanese, of the same age range and apparently subject to the same general conditions in Formosa, striking differences in some helminth infections were observed. Hookworm occurred in 78·6% of the Chinese and 93·5% of the Taiwanese, *Ascaris* in 19·7% and 72·3% respectively and *Trichuris* in 58·8% and 89% respectively. Nine cases of *Schistosoma japonicum* infection were observed among the Chinese, none among the Taiwanese. S.W.

771—Mie Medical Journal.

a. ODA, T., 1956.—" Studies on schistosome dermatitis in the regions along the Kiso River. I. Studies on 'endo-kabure' and 'sobu-make', a paddy-field dermatitis, in Nagashima, Mie Prefecture." **6** (1/2), 175–186.
b. ODA, T., 1956.—" Studies on schistosome dermatitis in the regions along the Kiso River. II. Studies on 'suiden-byo', a paddy-field disease, in Aichi Prefecture." **6** (1/2), 187–194.

(771a) Oda describes the epidemiology and histopathology of the dermatitis known in the Nagashima district of the Mie Prefecture as "endo-kabure" and "sobu-make". He finds the disease to be caused by the cercariae of *Gigantobilharzia sturniae* which are emitted from *Polypylis hemisphaerula*. Adults and eggs of *G. sturniae* were found in *Motacilla grandis* and *Spodiopsar cineraceus*. The author describes effective control measures which were taken experimentally. P.K.

(771b) Oda describes the epidemiology and histopathology of the dermatitis known in Aichi Prefecture as "suiden-byo". The author attributes the disease to the penetration of the skin by cercariae of *Gigantobilharzia sturniae*, which were present in *Polypylis hemisphaerula*. Adults and eggs of *G. sturniae* were found in *Spodiopsar cineraceus* and *Passer montanus saturatus*. Experiments on the control of the disease, using copper sulphate, nitro-lime and water-soluble benzene hexachloride against the vector snails, are described. P.K.

772—Mikrokosmos.

a. REINIG, H. J., 1956.—" Die ersten Furchungen bei Fadenwürmern." **46** (1), 1–3.

(772a) Reinig points out that although the ova of sea urchins are looked upon as the classical objects for the study of segmentation they are not readily obtainable inland. He suggests that *Rhabditis* ova are an excellent substitute and describes how worms should be collected and ova recovered for microscopic studies. A series of eight photomicrographs illustrates the process of segmentation in *Rhabditis* ova. A.E.F.

773—Military Medicine.

a. KEMP, H. A., HUNTER, III, G. W., WILKINS, O. P., SMALLEY, H. & DASHIELL, M. A., 1956.—" Studies on schistosomiasis. XI. Some ointments examined for protection against *Schistosoma mansoni* cercariae in preliminary tests." **119** (1), 1–10.

(773a) Kemp *et al.* carried out preliminary screening tests on 134 ointments to determine their efficacy as protective agents against the penetration of cercariae of *Schistosoma mansoni*. 40 of these ointments gave 100% relative protection to white mice for 30 minutes, 45 gave 90% to 100% relative protection, and the remaining 49 yielded less than 90%. Relative protection (z) was calculated as follows: $z=\frac{x-y}{x}$ where x=average number of worms recovered per control mouse, and y=average number of worms recovered per protected mouse. Mice were belly-shaved and in each experiment 15 protected (i.e. ointment-treated) animals and ten controls were each exposed to 100 cercariae from an experimentally infected laboratory colony of *Australorbis glabratus*. The results, which are very briefly discussed, are set forth in two tables. J.M.W.

774—Minerva Medica.

a. MAURO, G., 1956.—" Sulla terapia della teniasi con un preparato di stagno." Anno 47, **1** (9), 258–261.

b. GAETANI, G. F. DE, 1956.—" Profilassi delle elmintiasi." Anno 47, **2** (101), 2098–2102.

(774a) Mauro reports on the anthelmintic efficiency of stannoxyl. 32 cases of taeniasis, five cases of enterobiasis and two cases of ascariasis were treated with stannoxyl tablets, containing 0·01875 gm. of stannic oxide and 0·1625 gm. of metallic tin. The patients were given 18 tablets a day in three divided doses. In some adult cases this dose was increased to 30 tablets and in four cases in children it was reduced to 9 tablets a day. The treatment lasted two to three days, repeated in some cases after three days. In the case of taeniasis 71% of cures were obtained as well as in one case of enterobiasis. The drug had no effect in the cases of ascariasis. Two patients complained of transient abdominal discomfort on the second day of treatment. N.J.

775—Minnesota Medicine.

a. MYHRE, J. & WALLACE, F., 1956.—" Hookworm treatment of polycythemia vera." **39** (2), 99–100, A–40.

b. WALLACE, F. G. & SANDERS, A. I., 1956.—" Trichinosis, a declining infection." **39** (3), 157–158.

c. THOMPSON, Jr., J. H., 1956.—" Is immunity to trichinosis being naturally acquired?" **39** (3), 174–175.

776—Mississippi Doctor.

a. KETY, S. S., 1956.—" Experience with piperazine in the treatment of enterobiasis (oxyuriasis). A clinical report." **34** (1), 10–12.

777—Mitschurin Bewegung.

*a. REINKE, H., 1956.—" Mehr Aufmerksamkeit dem Kartoffelnematoden." **5**, 217–220.

778—Montpellier Médical.

a. HARANT, H. & RIOUX, J. A., 1956.—" Les diagnostics de laboratoire en parasitologie." **49** (5), 401–421.
b. HARANT, H. & RIOUX, J. A., 1956.—" Dix ans d'activité du laboratoire de parasitologie clinique. Conclusions pratiques." **49** (5), 422–426.
c. HARANT, H., CASTEL, P. & GRAS, G., 1956.—" Valeur anthelminthique de quelques composés minéraux de l'étain." **49** (5), 432–443.
d. GROS, C. & VLAHOVITCH, B., 1956.—" Cysticercose cérébro-méningée." **49** (5), 444–448.
e. BALMÈS, A. & THÉVENET, A., 1956.—" Les aspects radiologiques du kyste hydatique du poumon." **50** (2), 233–243.
f. BALMÈS, A. & VINCENT, P., 1956.—" Les réactions biologiques de l'hydatidose." **50** (2), 244–248.

(778c) Harant *et al.* have made a study of the anthelmintic properties of metallic tin and various tin compounds and describe their methods and results in detail. *In vitro* tests were made on *Rhabditis macrocerca*; *in vivo* tests were carried out on mice infected with *Syphacia obvelata* or *Aspiculuris tetraptera* and rats with *Nippostrongylus muris* or *Hymenolepis fraterna*. A few clinical trials were made on 33 patients with (i) *Taenia saginata* and *Ascaris*, (ii) *T. saginata* and *Enterobius*, (iii) *T. saginata* and *Trichuris*, (iv) *Taenia saginata* alone, (v) *Hymenolepis nana* and (vi) *Fasciola hepatica*. Tin was found to be useless against nematodes whether used as the metal or as compounds but more effective against cestodes; its efficacy was much increased by the addition of small quantities of mepacrine. S.W.

779—Mysore Agricultural Journal.

a. USMAN, S., 1956.—" Damage to potato by eel-worms." **31**, 110–111.

(779a) This is a popular article about [root-knot] nematodes, here called *Heterodera* sp., in South India. There are brief recommendations on control measures. C.C.D.

780—Nauchnie Trudi. Ukrainski Institut Eksperimentalnoi Veterinarii.

a. KLESOV, M. D., 1956.—[Biology and ecology of flies which act as intermediate hosts of *Thelazia*.] **23**, 245–260. [In Russian.]
b. KLESOV, M. D. & POPOVA, Z. G., 1956.—[Prophylactic methods against dicrocoeliasis in sheep.] **23**, 261–279. [In Russian.]
c. KLESOV, M. D. & KALUGIN, L. K., 1956.—[Eradication of keratoconjunctivitis caused by *Thelazia* in cattle in the Kharkov area.] **23**, 281–286. [In Russian.]

(780a) In this long and detailed paper Klesov, after discussing *in extenso* the work of others on the biology and ecology of flies acting as intermediate hosts of *Thelazia*, reports on his own experiments concerning these questions. He reports that the proven vectors *Musca larvipara* and *M. autumnalis*, are closely associated with cattle, the eye and the nose regions of which they attack from May to October. Both species were found to be heliophile, easily enduring direct sun-rays, and did not occur in shaded places. Development of *M. larvipara* took 13 to 15 days under laboratory conditions, at a temperature of 24°C. to 28°C., and maximum longevity was from 43 to 46 days. Feeding *M. larvipara* exclusively on carbohydrates induced sterility. Fertilized *M. larvipara* females laid eggs and produced larvae only on cattle faeces, showing no attraction for faeces of horse and pig. N.J.

(780b) Klesov & Popova list the molluscs of areas endemic for dicrocoeliasis in sheep in the Kharkov region. They belong to ten families, 15 genera and 19 species, of which six have been reported as intermediate hosts of *Dicrocoelium dendriticum*, namely, *Fruticicola fruticum*, *Eumphala strigella*, *Cochlicopa lubrica*, *Zonitoides nitidus*, *Zenobiella rubiginosa* and *Chondrula tridens*. The following chemical fertilizers were tested for molluscicidal effect when applied at the normal rate for agricultural purposes: superphosphate, Kainit, sulphate of ammonia, nitrate of potassium, sodium nitrate, straw ashes and 5% to 12% of hexachlorocyclohexane in an inert base. Straw ashes destroyed 100% of slugs within three minutes, but none of the substances was effective against snails. 75 chickens per hectare were then put into a four hectare space, where 472 snails (including specimens of *Pupilla muscorum*, *Valonia*

pulchella, *Euconulus fulvus*, *Vertigo antivertigo*, *Cochlicopa lubrica* and *Valonia costata*) were present on the average per square metre. On the fifth day after the introduction of the birds the mollusc population was reduced by 92·4% and by the 20th day it was diminished by 97·5%. *Cochlicopa lubrica*, the proven first intermediate host of *D. dendriticum*, disappeared completely, as did also *Euconulus fulvus* and *Vertigo antivertigo*. N.J.

(780c) Klesov & Kalugin discuss the eradication of kerato-conjunctivitis caused by *Thelazia* in the Kharkov area. As a result of wide-spread treatment of cattle in the area the number of infected animals in 1954 was reduced to half of that in 1953. Whereas in 1954 cattle were treated in late winter and spring, in 1953 they were not treated until the summer, when there was a greater possibility of reinfection. Further results of the campaign were that infection was completely eradicated in eight regions and reduced to one ninth of its previous importance in seven other regions. N.J.

781—Neurology. Minneapolis.

a. NIETO, D., 1956.—" Cysticercosis of the nervous system. Diagnosis by means of the spinal fluid complement fixation test." **6** (10), 725–738.

782—New York State Journal of Medicine.

a. WARNER, B. W., 1956.—" The role of the proctologist in the diagnosis of schistosomiasis mansoni by sigmoidoscopy and rectal biopsy." **56** (20), 3137–3140.

783—New Zealand Medical Journal.

a. HIDDLESTONE, H. J. H., 1956.—" Bile peritonitis from ruptured hepatic hydatid cyst." **55** (308), 320–322.

784—Nordisk Jordbrugsforskning.

a. AHLBERG, O., 1956.—" Några synpunkter på nematodproblemet." **38** (3/4), 399–402. [Discussion pp. 409–410.]
b. LINDHARDT, K., 1956.—" Spredningsmuligheder hos nematoder." **38** (3/4), 403–404. [Discussion pp. 409–410.]
c. STØEN, M., 1956.—" Kløverål og potetål i Norge." **38** (3/4), 405–406. [Discussion pp. 409–410.]
d. BINGEFORS, S., 1956.—" Resistens mot stajälknematod hos rödklöver." **38** (3/4), 407–409. [Discussion pp. 409–410.]

(784a) Distribution of the potato-root eelworm in Sweden is discussed. Crop rotation with three years between potato crops is considered to be the best way of controlling the pest—now only two years are required in infested areas. Clean seed potatoes from soil not infested by the eelworm and rigorous cleaning of farm equipment for co-operative use in potato growing areas are very important. *Meloidogyne* spp. have been found in Sweden on vegetables and clematis, grown in the field. Nematode attacks have been found in imported bulbs. S.B.

(784b) Possibilities for spread of plant-parasitic nematodes are discussed. Stem nematodes and *Aphelenchoides* spp. will be spread with soil on equipment, tools and pots but such transmission is likely to be effective only over short distances. Infested compost soil may cause severe infestations. Water may carry nematodes from one plant to another as well as from one part of a field to another. Infested plant material is also of very great importance for the distribution of these nematodes. Cysts of *Heterodera* spp. may be spread to a large extent with soil on farm equipment, plants and seed potatoes. They may also be spread by the wind from one farm to another. It is important that modes of dissemination of the nematodes are emphasized in advisory work. Healthy plant material is important—in Denmark healthy nursery plants of strawberries are already available and healthy seed of bulbs and onions will soon be available also. S.B.

(784c) In Norway *Ditylenchus dipsaci* on clover was found in 1884 but up to 1951 only seven attacks were reported. In a survey in 1952–54 attacks on red clover were found in 22% of first year leys and in 49% of older leys. No differences between soil types were found but more numerous and severe attacks were observed on hilly land than on flat land. There was no direct correlation between rainfall and attacks. Potato-root eelworms (*Heterodera rostochiensis*) were found in the U.S.A. in 1951 in two plant collections from Norway and in 1955 infestations by this eelworm were found in two Norwegian fields. Attacks have later been found in some more places in Norway. A four-year crop rotation in infested areas is requested and potato growing may be prohibited if that is considered necessary. S.B.

(784d) Red clover varieties which are resistant to stem nematodes have been grown in south Sweden for 20 years. They are also resistant when grown in other parts of Sweden, but small differences in resistance when infected with nematode populations from different parts of Sweden have been found in the laboratory. In a resistant variety the development of the nematodes is arrested in most of the plants. The inheritance of resistance has been studied. S.B.

785—Österreichische Zoologische Zeitschrift.

a. WIESER, W., 1956.—"Eine Sammlung mariner Nematoden aus Piraeus (Griechenland)." **6** (3/5), 597–630.

(785a) Wieser records 44 species of marine nematodes from samples taken at 6 or 10 metres depth from the rocks directly below the biological station in the Piraeus. Among them are three new species which are described and figured: *Chromadorina inversa* n.sp. (male and female), synonym *C. gracilis* of Schuurmans Stekhoven, 1943 *nec* Filipev, 1922; *C. incurvata* n.sp. (male) for which no differential diagnosis is given; *Neochromadora coudenhovei* n.sp. characterized by the form of the stoma and absence of teeth. The synonomy and relationships of various other species are discussed. J.B.G.

786—Orvosi Hetilap.

a. PÁLL, G., VANKI, K. & PUMP, K., 1956.—"Adatok a strongyloidiasis klinikumához és therapiájához." [Clinical and therapeutic data on strongyloidiasis.] **97** (7), 181–185.

787—Pediatria Polska.

a. KROTOCHWIL-SKRZYPKOWA, M., 1956.—"Przypadek glistnicy z objawami zapalenia opon i zespołem Löfflera." [A case of ascariasis with manifestations of meningitis and Loeffler's syndrome.] **31** (3), 325–330.

788—Pediatric Clinics of North America.

a. FAUST, E. C. & JUNG, R. C., 1956.—"Protozoan and metazoan parasitoses of the intestinal tract." Year 1956, pp. 169–190.

789—Pediatrics. Springfield, Ill.

a. JUNG, R. C., EMERSON, S. M. & SEWELL, B., 1956.—"Chemoprophylaxis of enterobiasis." **18** (5), 762–766.

(789a) Jung *et al.* found that a piperazine citrate syrup of which 1 ml. contained the equivalent of 100 mg. of piperazine hexahydrate cured 19 out of 24 boys suffering from enterobiasis when given in a dose of 5 ml. three times daily for a week, and 24 out of 25 when treatment was extended over 14 days. 19 out of 23 boys were cured by administration of 500 mg. of piperazine citrate in tablet form three times a day for a week. The piperazine syrup given weekly in a single dose of 15 ml. to 45 ml. was apparently effective in preventing re-infection in 23 out of 42 boys, while all of 22 controls receiving no prophylactic medication became reinfected. The boys in question ranged in age from four to 14 years. J.M.W.

790—Pédiatrie. Lyons.

a. NEIMANN, N., PIERSON, M. & DEBRY, G., 1956.—" Les formes médicales graves de l'ascaridiose digestive et hépatique chez les enfants." **11** (3), 317–333. [English summary p. 317.]

(790a) A study of serious forms of ascariasis infection (of the digestive system and the liver) in 26 cases allows the distinction of five different syndromes. The authors insist on the gravity of these syndromes and their development which was sometimes fatal. A study of the different diagnoses and of the treatment is added to the review. G.I.P.

791—Penggemar Alam. Bogor.

a. HOLLEMAN-HAYE, A., 1956.—" *Ancylostoma malayanum* (Alessandrini 1905). A new species for Indonesia?" **36** (1/2), 5–9.

(791a) Holleman-Haye describes *Ancylostoma malayanum* from *Ursus malayanus* from the jungle near Palembang and concludes that this is its first record from Indonesia. G.I.P.

792—Policlinico (Sezione Pratica). Rome.

a. MARCHIAFAVA, G., 1956.—" Sull'echinococcosi dei linfonodi." **63** (5), 145–148. [English & French summaries p. 148.]
b. TIMPANO, P., 1956.—" Recenti orientamenti per una lotta efficace contro l'anchilostomiasi." **63** (7), 220–221. [English & French summaries p. 221.]

793—Polnohospodárstvo. Bratislava.

a. DOBIAŠ, A., 1956.—" Osevné postupy v boji proti hádatku zemiakovému." **3** (2), 258–262.

(793a) Dobiaš cites an extensive bibliography on the control of *Heterodera rostochiensis* in Western Europe and suggests crop rotation as an efficient method of control. N.J.

794—Polski Przegląd Chirurgiczny.

a. BOGACKI, E. & MEYER, J., 1956.—" Owsica próba oceny jej znaczenia w powstawniu zapalenia wyrostka robaczkowego." [Oxyuriasis of the vermiform appendix with an attempt to evaluate its importance in the origin of appendicitis.] **28** (11), 1131–1137. [English & Russian summaries pp. 1136–1137.]

795—Polski Tygodnik Lekarski. Warsaw.

a. BOROŃ, P., FARNER, J., KOWALSKI, E., KUŹMIŃSKA, D., PENAR, S., GRĄDZKI, J. & LANKOSZ, J., 1956.—" Distomiaza płuc (paragonimiaza płuc)." **11** (5), 197–207. [English & Russian summaries p. 207.]
*b. HELIŃSKI, M., 1956.—" Glistnica ludzka i choroby alergiczne skóry." [Ascariasis and allergic skin diseases in man.] **11** (5), 215–217.
*c. SWICA, S., BLUMENSTOCK, J. & LI-HE-JONG, 1956.—" Niezwykłe powikłanie choroby robaczej." [An unusual complication in helminth infection.] **11** (5), 217–218.
d. ZIEMICHÓD, T., 1956.—" Przypadek równoczesnej włosnicy i pasocznico-ropnicy." **11** (7), 312–314. [English & Russian summaries p. 314.]
e. STEGAWSKI, T., 1956.—" Przedziurawiające owrzodzenia żołądka i jelit w przebiegu włośnicy (trichinosis)." **11** (10), 462–467. [English & Russian summaries p. 467.]
f. JOCHWEDS, B., WRÓBLEWSKI, W. & ZWOLIŃSKI, T., 1956.—" Dwa przypadki włośnicy, leczone skutecznie za pomocą ACTH." **11** (18), 805–808. [English & Russian summaries p. 808.]
g. JANUSZEWICZ, H. & MITTELSTAEDT, M., 1956.—" Zakażenie tęgoryjcem dwunastnicy (ancylostomiasis) u chorego z zespoleniem żołądkowo-jelitowym." **11** (19), 844–846. [English & Russian summaries p. 846.]
h. ZIELIŃSKI, J., 1956.—" Bąblowiec nerki, moczowodu i pęcherza." [Echinococcosis of the kidney, ureter and bladder.] **11** (24), 1086–1088. [English & Russian summaries p. 1088.]
*i. WANDA, M., 1956.—" Przypadek paragonimiazy." [A case of paragonimiasis.] **11** (25), 1125–1126.

j. BOGUCKI, L., 1956.—" Leczenie piperazyną glistnicy u dzieci." [Piperazine therapy of helminthiases in children.] **11** (27), 1206–1208. [English & Russian summaries p. 1208.]

*k. BOBECKA, M., 1956.—" Przypadek motylicy wątrobowej u człowieka." [Case of hepatic distomiasis in man.] **11** (34), 1491–1493.

*l. STEGAWSKI, T., 1956.—" Przypadki włośnicy po spożyciu mięsa zwierząt żyjących dziko (leśnych)." [Cases of trichinelliasis following consumption of meat of wild animals living in forest.] **11** (47), 2005–2008.

(795a) Boroń *et al.* after citing an extensive bibliography on fluke infection of the lungs due to *Paragonimus westermanii* report on their own observations of the disease in 142 patients in Korea. Anaemia and malnutrition were sometimes present. Eosinophilia was not a constant feature. Radiological examination served as a means of controlling the results of treatment. Bronchography was effective in two cases out of four in localizing the cysts. Pathological changes were mainly present at the base of the lungs. Haemoptysis was a constant feature of the disease. Eggs of the fluke in the sputum were diagnostic. Combined treatment with emetine, sulphonamides, penicillin and streptomycin gave good results, especially when emetine and antibiotics were given intratracheally. N.J.

(795d) Ziemichód describes a case of simultaneous trichinelliasis and pyaemia with abscesses localized on the forearms and on the chest. In one of these abscesses well preserved specimens of *Trichinella spiralis* were found. Aureomycin proved to be effective in treatment of the pyaemia. N.J.

(795e) Stegawski describes a case of perforating ulcerations of the stomach and intestines in the course of trichinelliasis in a young woman patient in Warsaw. The author gives a detailed clinical history. Death occurred during the seventh week, despite surgical intervention to repair a perforated ulceration in the descending colon. At autopsy, besides this ulceration, which produced a hole the size of a small pea, numerous other ulcerations penetrating to the serous membrane were found in the stomach, among them a perforated one 16 mm. in diameter. The author concludes that the ulcerations could not be explained by the coexistence of trichinelliasis and peptic ulcers as the latter do not affect the large intestine. He gives five other possible explanations among which he considers the most probable to be an Arthus reaction following repeated contact of the intestinal wall with the body of *Trichinella*. N.J.

(795f) Jochweds *et al.* describes two cases of trichinelliasis successfully treated with ACTH. In the first case the patient had received 1·5 ml. to 5 ml. of fouadin every other day over a week in addition to supportive treatment. Deterioration of the condition of the patient led to administration of ACTH in doses ranging from 50 mg. to 100 mg. *per diem* injected intramuscularly, and strofantin administered intravenously at a dose rate of 0·125 mg. per 12 hours. 900,000 units of penicillin were also given per day for some time. ACTH was administered for a total of 14 days. The patient was discharged a week after treatment completely cured. In another case ACTH was administered to a woman for 12 days, starting with a total of 50 mg. *per diem*, given in six divided doses, which was reduced by 5 mg. a day after five days. A week after the treatment the patient was discharged cured. Eosinophilia of 10% to 15% still persisted three months later. The authors emphasize the antiallergic and vasoconstrictor effects of ACTH. N.J.

(795g) Januszewicz & Mittelstaedt report on ancylostomiasis in a patient with gastro-intestinal anastomosis. Faecal examination revealed numerous eggs of *Ancylostoma duodenale*, some eggs of *Trichuris trichiura* and occult blood. Radiological examination showed the presence of an abscess in the region of a gastro-intestinal anastomosis. 600 mg. of hexylresorcinol, repeated after two weeks, improved the general condition of the patient after a month. As the infection was still present, a four-week treatment with vermizym was given which produced some improvement but no radical cure. Finally surgical treatment for the abscess and anastomosis was undertaken and the treatment with vermizym repeated two months later. The patient was discharged in a good condition with no more signs of infection N.J.

796—Postępy Higieny i Medycyny Doświadczalnej.

*a. KOZAR, Z., 1956.—" Zjawiska odpornościowe przy włośnicy (trichinellosis)." [Immunological phenomena in trichinelliasis.] **10** (4), 329–358.

797—Práce Brněnské Základny Československé Akademie Věd.

a. ERGENS, R., 1956.—" Výsledky výzkumu monogenetických motolic rodu *Dactylogyrus* Diesing, 1850." **28** (7), 346–376. [German & Russian summaries pp. 375–376.]

(797a) Of 170 fish (belonging to 18 species) examined in Moravia, 39·4% were infected with trematodes. The 17 species found included *Dactylogyrus minutus*, *D. crucifer*, *D. sphyrna* and *D. zandti*, which are recorded for the first time from Czechoslovakia, and the new species *D. folkmanovae* n.sp. from *Rutilus rutilus* and *Leuciscus cephalus*, *D. hemiamphibothrium* n.sp. from *Acerina cernua*, *D. monocornis* n.sp. from *Tinca tinca vulgaris*, and *D. navicularis* n.sp. and *D. vranoviensis* n.sp. from *L. cephalus*. The five new species are described. G.I.P.

798—Practitioner.

a. SEATON, D. R., 1956.—" Current therapeutics. CVI. Anthelmintics." **177** (1060), 507–511.

(798a) In this review of the drugs used in the treatment of the helminths commonly infecting man, Seaton draws attention to the potential risk of treating *Taenia solium* with dichlorophen, as there is a danger of causing cysticerciasis by autoinfection from the ova liberated by the disintegrating proglottides. S.W.

799—Prensa Médica Argentina.

a. BACIGALUPO, J. & BACIGALUPO, A. D'A., 1956.—" La *Taenia saginata* puede producir *Cysticercus bovis* en el hombre?" **43** (13), 1052–1054.
b. BACIGALUPO, A. D'A., 1956.—" Clínica de la teniasis humana por *Taenia saginata*." **43** (19), 1520–1527; (20), 1600–1608.
c. ANDRÉS DE LA PLAZA, N., 1956.—" Síndromes hemorragíparos provocados por zooparásitos." **43** (22), 1790–1791.
d. BACIGALPUO, A. D'A., 1956.—" El estaño en el tratamiento de la teniasis humana por *Taenia saginata*." **43** (34), 2546–2552.

800—Presse Médicale.

a. CATTAN, R., 1956.—" Les parasites de l'intestin grêle." **64** (30), 698–701.
b. TASQUE, P. & SEJOR, 1956.—" Traitement du taeniasis par la quinacrine." **64** (36), 853.
c. LEVI-VALENSI, A., BIÉS, A., AKOUN, G. & LARBAOUI, 1956.—" Echinococcose secondaire pleuro-péritonéale à point de départ hépatique." **64** (39), 913–914.
d. LIARAS, H., 1956.—" Le traitement du kyste hydatique du poumon. Notre conduite actuelle." **64** (79), 1817–1818.
e. HOUEL, H., 1956.—" Kyste hydatique du ventricule gauche. A propos de deux observations." **64** (94), 2184–2186.

801—Priroda. Moscow.

a. POLOZHENTSEV, P. A., 1956.—[The worm parasites of insects.] Year 1956, No. 12, pp. 102–104. [In Russian.]

(801a) Polozhentsev gives a general discussion of helminth parasitism in insects and distinguishes between those that are beneficial, infecting and destroying harmful insects, and those which are harmful being transmitted through the insects to the vertebrate hosts, including man. G.I.P.

802—Přírodovědecký Sborník Ostravského Kraje, Opava.

a. DYK, V. & LUCKÝ, Z., 1956.—" Parasitofauna ryb řeky Moravice." **17** (4), 571–580. [German & Russian summaries pp. 579–580.]

(802a) The authors have examined 927 fish (belonging to 18 species) covering the entire length of the river Moravice and found 20·71% to be infected with 21 species of various

parasites, chiefly helminths and including the leech, *Cystobranchus respirans*. The parasites are listed under hosts [only the local names of the fish are given]. G.I.P.

803—Probleme de Parazitologie Veterinara. Institutul de Patologie si Igiena Animala, Bucharest.

a. LUNGU, V., MINCIUNĂ, V., ŞUTEU, E., SÎRBU, Z. & TAGA, L., 1956.—" Fascioloza acută a oilor." No. 4, pp. 5–17. [French summary p. 17.]
b. LUNGU, V., IORGULESCU, P. & ŞUTEU, E., 1956.—" Singamoza fazanilor şi combaterea ei." No. 4, pp. 19–29. [French summary p. 29.]
c. STOICAN, E., 1956.—" *Polymorphus boschadis* la raţă în RPR." No. 4, pp. 43–48. [French summary p. 48.]
d. MIHĂESCU, N. & STOICAN, E., 1956.—" Cercetări asupra valorii reacţiei alergice în diagnosticul ascaridiozei porcine în unităţi agricole." No. 4, pp. 49–56. [French summary p. 65.]

(803a) The authors describe an outbreak of acute fascioliasis in sheep. One month after the appearance of the first case the morbidity was 45·32% and the mortality 41·28%. Clinically the animals showed serious anaemia, inappetence and ascites. Intense haemorrhage in the liver was the chief cause of death. Changes in the blood and urine and the histopathology of the liver are discussed. S.W.

(803b) Lungu *et al.* treated an outbreak of *Syngamus trachea* infection in adult *Phasianus colchicus* and *P. colchicus tenebrosus* by intra-tracheal injections of 1 ml. of Lugol's solution. A single injection was efficacious in 43·2% of the birds treated and two injections in 24·3%; a third injection was necessary in 32·4%. The eggs measured 90·4 μ by 46·1 μ, the breadth to length proportion being thus slightly different from that given in the classical descriptions. S.W.

(803c) Stoican records *Polymorphus boschadis* for the first time in ducks in Rumania. The morphology is described. Mortality was three times as high when there were concurrent bacterial or viral infections. Anthelmintic treatment with carbon tetrachloride was effective and increased the resistance of the ducks to the other infections. S.W.

(803d) Mihăescu & Stoican have found that a hydrochloric acid extract of *Ascaris* muscle is valuable in the diagnosis of ascariasis in pigs. Positive reactions were obtained in 77·1% of cases. Cachectic or rachitic animals or those in a poor physiological state either showed no reaction to the test or reacted very feebly. The authors consider that the allergic reaction is of great value in the diagnosis of the disease before the infection becomes patent. S.W.

804—Probleme Veterinare. Bucharest.

*a. OLRESCU, A. & GHEORGHIU, I., 1956.—[Recherches sur les foyers naturels de trichinose dans la région de Suceava et considérations sur l'épizootologie.] Year 1956, No. 2, pp. 18–27. [In Rumanian: French summary.]
*b. ADAMESTEANU, C., POPA, M. & JIDUC, A., 1956.—[La distomatose aigüe des moutons.] Year 1956, No. 4, pp. 24–28. [In Rumanian.]

805—Probleme Zootehnice si Veterinare. Bucharest.

*a. NEGRU, D., 1956.—[Existence de l'oxyure *Probstmayria vivipara* Probstmayr 1865 chez les chevalins: observations sur la pathogénie.] No. 2, pp. 54–58. [In Rumanian: French summary.]
*b. APOSTOLESCU, C., 1956.—[Observations sur la strongylose pulmonaire des porcs dans la Région de Cluj.] No. 2, pp. 77–78. [In Rumanian.]
*c. DAMIAN, T., 1956.—[Parasitisme erratique chez le porc.] No. 3, pp. 62–63. [In Rumanian French summary.]
*d. STOICAN, E., 1956.—[Les helminthiases communes à l'homme et aux animaux.] No. 4 pp. 37–45. [In Rumanian.]
*e. CIRONEANU, I., BOGDAN, C., BALUTIU, I. & BARBURA, T., 1956.—[Considérations concernant la lutte contre la distomatose dans la région de Cluj.] No. 6, pp. 88–94. [In Rumanian.]

*f. PASCU, S., 1956.—[Echinococcose et distomatose chez les bovins de la région de Hunedoara.] No. 6, pp. 94–97. [In Rumanian.]
*g. CELAN, B. & HAROVIUC, S., 1956.—[Observations concernant la valeur thérapeutique de la phénothiazine dans le traitement de la strongylose pulmonaire des moutons.] No. 7, pp. 93–95. [In Rumanian.]
*h. OPRESCU, A., BODNARU, I., PASCAL, I., GHEORGHIU, E. & GHEORGHIU, I., 1956.—[Sur le traitement de la strongylose pulmonaire ovine, d'après la formule Lungu-Mihaescu.] No. 7, pp. 95–98. [In Rumanian.]

806—Problemi Gematologii i Perelivaniya Krovi. Moscow.

*a. ALTUKHOVA, G. I., 1956.—[Characteristics of haemopoiesis in opisthorchiasis.] **1** (3), 31–33. [In Russian.]

807—Proceedings of the Hawaiian Academy of Science.

a. GILBERT, J. C., 1956.—" The inheritance of resistance to severe root knot from *Meloidogyne incognita* in tomato." 31st Annual Meeting (1955–56), p. 17.

808—Proceedings of the Pakistan Science Conference.

a. ANSARI, M. A. R. & NASIR, A. S., 1956.—" Intestinal protozoa and helminths detected by rapid method amongst Borstal Jail prisoners." [Abstract.] 8th (1956), Part III, Section of Biology, p. 49.
b. AKHTAR, S. A., 1956.—" A new oxyurid (Nematoda) parasitic in the Baluch pika." [Abstract.] 8th (1956), Part III, Section of Biology, p. 52.
c. KHAN, A. Q. H., HUSSAIN, S. T. & AKHTAR, A. S., 1956.—" Mixed infection of *Pasteurella haemolytica* and *Haemonchus contortus* in sheep." [Abstract.] 8th (1956), Part III, Section of Medicine and Veterinary Sciences, p. 5.

(808a) An examination of 1,043 stool specimens from inmates of the Borstal Institute, Lahore showed infection with *Ancylostoma duodenale* in 88, with *Ascaris lumbricoides* in seven, with *Enterobius vermicularis* in six, with *Taenia solium* in four, with *Trichuris trichiura* in two, and with *Strongyloides stercoralis* in one. In the Lahore region gastro-intestinal troubles are said to be second only to malaria as a cause of morbidity, and 95% of such cases are said to harbour intestinal parasites (protozoa or helminths). J.M.W.

(808c) Khan *et al.* enumerate the symptoms of a hitherto unknown disease observed in both imported and local sheep of the Thal Development Authority Livestock Farm. These included irregular feeding and rumination, mild pyrexia, pale mucous membranes, slight roughness of coat, mucous diarrhoea, accelerated respiration and weakness of the hind-quarters. The disease was usually fatal in three to four days. Congestion of abomasum and lungs was observed in all cases at autopsy. Eggs of *Haemonchus contortus* were present in the faeces and adult worms occurred in the abomasum. *Pasteurella haemolyticus* was isolated from the lungs. J.M.W.

809—Proceedings of the Society of Experimental Biology and Medicine.

a. DOUGHERTY, E. C. & HANSEN, E. L., 1956.—" Axenic cultivation of *Caenorhabditis briggsae* (Nematoda: Rhabditidae). V. Maturation on synthetic media." **93** (2), 223–227.

(809a) Dougherty & Hansen have shown that newly hatched larvae of *Caenorhabditis briggsae* can be cultured to maturity and will produce an F_1 generation on a synthetic medium which contains 18 L-amino-acids, D-glucose, four ribonucleotides plus thymine, choline, *i*-inositol, ascorbic acid, 17 "trace" vitamins and growth factors and a mixture of salts. Details are given. Two other media would also support maturation and reproduction. The presence of as little as 0·032% of the standard strength of liver medium was markedly stimulatory and some F_1 larvae matured and produced an F_2 generation. Higher concentrations of liver medium were essential for sustained growth. S.W.

810—Public Health Laboratory. Burlington, Vt.

a. NORMAN, L., 1956.—" Effect of dehydration and storage on reagents used in the bentonite flocculation test for trichinosis." **14** (6), 157–161.

(810a) Norman investigated the standardization of methods of preparing and freeze-drying uniform sized bentonite particles, antigen and antisera for use in the bentonite flocculation test for trichinosis. He found that (i) lyophilized bentonite particles, after storage up to one year, adsorbed antigen satisfactorily and reacted in the same manner as freshly prepared bentonite suspensions; (ii) dehydrated antigen could be stored at least nine months without evidence of deterioration; and (iii) positive and negative sera from human and rabbit infections showed no change of reactivity after storage up to one year and could be used for standardization of the flocculation test. Hence reagents prepared in a central laboratory can be used in local diagnostic laboratories where time or facilities for their preparation do not exist. J.M.W.

811—Publicações Avulsas do Centro de Pesquisas Aggeu Magalhães. Recife.

a. MAGALHÃES NETO, B. & ALMEIDA, A. M. DE, 1956.—" Influência da dessecação sôbre o teor de glicogênio dos tecidos em *Australorbis glabratus*." **5,** 1–5. [English summary p. 4.]
b. BARBOSA, F. S., CARNEIRO FILHO, J., MORAES, J. G. DE & CARNEIRO, E., 1956.—"Atividade moluscocida dos sais insolúveis de cobre." **5,** 7–20. [English summary pp. 18–19.]
c. COELHO, M. DE V. & BARBOSA, F. S., 1956.—" Qualidades de vetor dos hospedeiros de *Schistosoma mansoni* no nordeste do Brasil. III. Duração da infestação e eliminação de cercárias em *Tropicorbis centimetralis*." **5,** 21–30. [English summary p. 29.]
d. BARBOSA, F. S. & COELHO, M. DE V., 1956.—" Alguns aspectos epidemiológicos relacionados com a transmissão sa esquistossomose em Pernambuco, Brasil." **5,** 31–47. [English summary p. 46.]
e. BARBOSA, F. S., 1956.—" The taxonomic position of the snail vectors of *Schistosoma mansoni*." **5,** 49–52.
f. BARBOSA, F. S., CARNEIRO, E. & BARBOSA, I., 1956.—" On the anatomy of *Tropicorbis chilensis* (Anton) and its relationships to the Brazilian Planorbidae (Mollusca, Pulmonata)." **5,** 53–60.

(811a) Magalhães Neto & Almeida have investigated the progressive decrease in glycogen content of various tissues of snails (*Australorbis glabratus*) subjected to desiccation. The greatest loss occurs in those tissues containing the most glycogen (gonad, digestive gland and stomach) while the muscular foot shows relatively little loss. The greatest decrease occurs in the first fifteen days when the percentage loss is about 50%. The glycogen content then continues to drop slowly until a level of 10–15% of the original is reached just before the death of the snails. C.W.

(811b) Barbosa and his co-workers describe field and laboratory trials to test the molluscicidal activity of various insoluble copper compounds, the carbonate, the oxide and Paris green. It was found early in the work that the oxide was too irritant and merely repelled snails without killing them and further experiments both with this and with Paris green were discontinued. The snail used for the tests was *Tropicorbis centimetralis*, a species which normally feeds on the mud substratum of its habitat. Copper carbonate proved to be very effective in a concentration of about 30 gm. per square metre or more but excessively heavy doses act as an irritant and repel the snails. The residual effect of this molluscicide was demonstrated to be active one year after application. C.W.

(811c) Coelho & Barbosa continue their series of studies on the intermediate hosts of *Schistosoma mansoni* in north-east Brazil with this report of the duration of infection and cercarial shedding in *Tropicorbis centimetralis*. Natural infections in this species seldom exceed 1% of the snail population. Single miracidium infections in five snails were established in the laboratory; three of these snails shed cercariae for one or two days then died, one of the others shed for six days and the fifth individual shed for sixteen days. Both of these last two lost the infection and subsequent dissection showed no sporocysts. Naturally infected snails brought into the laboratory continued to shed cercariae for up to ninety-one days but the

majority died within ten days. Histological examination of *T. centimetralis* exposed to *S. mansoni* miracidia show little host tissue reaction in the twenty-four hours following exposure but after this period intense phagocytic activity was observed and nearly all the sporocysts were destroyed. C.W.

(811d) Barbosa & Coelho describe four centres of *Schistosoma mansoni* transmission in the State of Pernambuco, Brazil. Two of the foci are permanent streams and the other two are streams reduced to stagnant pools in the dry season. In one of the permanent and one of the temporary streams the intermediate host is *Australorbis glabratus* and in the other two localities the host is *Tropicorbis centimetralis*. Surveys of these areas have been carried out and data on the infection rates in snails, man and house rats are recorded. Some of the most interesting observations are that a low natural infection rate in *T. centimetralis* can maintain an infection rate in man as high as that achieved by a much higher snail infection rate in *A. glabratus*, that the infection in *T. centimetralis* shows much more marked seasonal variation than that in *A. glabratus*, and that in one of the areas studied 30% of the house rats examined were infected with *S. mansoni*. C.W

(811e) Barbosa discusses the problem of the generic nomenclature of the molluscan intermediate hosts of *Schistosoma mansoni*. He recommends that, until an official decision is given by the International Commission on Zoological Nomenclature, the most useful course to adopt is to retain the names *Australorbis* and *Tropicorbis* for the South American species and *Biomphalaria* for the African forms. He also discusses the significance of the successful cross-breeding experiments which have been carried out between allopatric species and the need for more of this type of work to be done in Brazil. C.W.

(811f) Barbosa, Carneiro & Barbosa present an anatomical description of the planorbid snail *Tropicorbis chilensis* (Anton). The species is differentiated from *T. centimetralis* by the absence of vaginal corrugations, from *Australorbis glabratus* by the absence of a renal ridge and vaginal pouch and from *A. nigricans* by the absence of carination on the shell and differences in the character of the prostate diverticula. *T. chilensis* further differs from the Brazilian species in that the mesocone of the lateral radula teeth is square-ended and not pointed. Breeding experiments have shown that *T. chilensis* is closer to *T. centimetralis* than to the other species mentioned in that hybrids between these two have been obtained but these hybrids show a reduction in viability. C.W.

812—Quarterly Journal of Microscopical Science.

a. BRADBURY, S., 1956.—" A histochemical study of the adipose cell of the leech, *Glossiphonia complanata*." **97** (4), 499–517.

813—Records of the Indian Museum.

a. DATTA, M. N. & SOOTA, T. D., 1956.—" On a new species of the genus *Acanthocephalus* from *Rana* sp. and a new host record of *Centrorhynchus cinctus* (Rudolphi)." Year 1954, **52** (2/4), 185–188.
b. TRIPATHI, Y. R., 1956.—" Studies on the parasites of Indian fishes. IV. Trematoda: Monogenea, Microcotylidae." Year 1954, **52** (2/4), 231–247.
c. SANJEEVA RAJ, P. J., 1956.—" On a new species of marine leech of the genus *Branchellion* (family Ichthyobdellidae), from the Indian coast." Year 1954, **52** (2/4), 249–256.
d. SARKAR, H. L., 1956.—" On a new Acanthocephala, *Pallisentis colisai*, from the fish *Colisa fasciatus* (Bloch and Schn.), with a note on *Acanthogyrus acanthogyrus* Thapar, from the fish *Labeo rohita* (Hamilton)." Year 1954, **52** (2/4), 349–362.
e. SOOTA, T. D. & SEN, J. K., 1956.—" On a new species of *Acanthosentis* Verma and Datta from *Glossogobius giuris* (Hamilton)." Year 1954, **52** (2/4), 363–365.

(813a) Datta & Soota describe and figure *Acanthocephalus kabulensis* n.sp. from the intestine of *Rana* sp. in Afghanistan and compare the new form with *A. minor* and *A. opsariichthydis*. *A. kabulensis* resembles both these in body shape; it may be distinguished

from *A. minor* by its larger size and by the smaller number of rows of hooks (7 to 9 compared with 13 to 14) and the smaller number of hooks in each row; it may be distinguished from *A. opsariichthydis* by the arrangement of the prostate glands. *Centrorhynchus cinctus* is recorded for the first time from *Ptyas mucosus*. S.W.

(813b) During a study of the parasites of marine and estuarine food fishes in India a number of new forms in the family Microcotylidae were collected. Tripathi now describes and illustrates these. *Megamicrocotyle chirocentrus* n.g., n.sp. occurred on the gills of four of six *Chirocentrus dorab* examined; it is distinguished from other genera in which the haptor is asymmetrical by the position of the vagina which is near the ovary. Two species are included in *Bicotyle* n.g., namely *B. stromatea* n.sp. (from *Stromateus cinereus*) and *B. reticulata* n.comb. (for *Microcotyle reticulata* Goto, 1894); in this new genus the haptor is symmetrical but the clamps on the two sides are unequal in number and size. *Microcotyle pamae* n.sp. from *Pama pama* is distinguished from *M. archosargi*, *M. canthari*, *M. labracis* and *M. polynemi* by the unequal numbers of clamps on the two sides of the haptor. All these species of *Microcotyle* are included in a new subgenus, *Bispina*, characterized by having both the cirrus and vagina armed. *Diplasiocotyle chorinemi* n.sp. from *Chorinemus tala* may be differentiated from all known species of the genus by the small suckers at the anterior end, the very long haptor and the spines of the genital atrium—two long central spines encircled by curved spines. *Thoracocotyle ovale* n.sp. from *Cybium guttatum* differs from *T. crocea* in the position of the genital organs, from *T. coryphaenae* in the number of clamps, the testes and the body shape and from *T. paradoxina* in the number of clamps and the shape of the haptor. *Lithidiocotyle secundus* n.sp. from *C. guttatum* is differentiated from *L. acanthophallus*, the only other species of the genus, by the structure of the accessory piece of the clamp, the presence of anchors on the haptor and the smaller size of the body and oral sucker. Microcotylinae is confined to those genera which have a bilaterally symmetrical or asymmetrical haptor and the morphological posterior end is at the posterior end of the body. Axininae is revived to include *Axine*, *Heteraxine* and *Axinoides*. *Lintaxine* Sproston, 1946 is regarded as a *genus inquirenda* of the Microcotylinae. *Microcotyle* is divided into four new subgenera, *Microcotyle*, with an armed cirrus but unarmed vagina, *Bispina*, with both cirrus and vagina armed, *Vaginaespina* with cirrus unarmed but vagina armed and *Aspina* with both cirrus and vagina unarmed. There is a key to the genera of the Microcotylinae. S.W.

(813c) *Branchellion plicusbranchus* n.sp. is described and figured from a single specimen found in a fish basket in the fish market at Royapuram, Madras; its host is therefore unknown. It is the largest specimen of this genus so far recorded (length, when preserved in alcohol, 64·0 mm.) and is differentiated from *B. borealis* and *B. torpedinis* by various morphological differences; the important taxonomic characters are tabulated. S.W.

(813d) Sarkar examined 101 fish (belonging to 16 species) from the Jumna river and ponds of Delhi State for acanthocephalans and only found *Colisa fasciatus* and *Labeo rohita* infected. Six male and three female specimens of *Pallisentis colisai* n.sp. were collected from one *C. fasciatus*; the new species is differentiated from *P. nandai*, *P. umbellatus* and *P. nagpurensis* by a number of morphological features which are discussed and tabulated. A single male *Acanthogyrus acanthogyrus* occurred in *L. rohita*. S.W.

(813e) Soota & Sen describe and illustrate *Acanthosentis giuris* n.sp. from *Glossogobius giuris*. The new species corresponds with *A. antispinus* and *A. sarkari* in that the body spines are restricted to the anterior half but differs from all known species of the genus in having a neck-like region lined with cuticle immediately behind the proboscis. S.W.

814—Report. Hawaiian Sugar Technologists.

a. MARTIN, J. P., WISMER, C. A. & CARTER, H. J., 1956.—" Soil fumigation and nematode studies in relation to yield decline of sugar cane varieties." 15th Annual Meeting (1956), pp. 105–107.

(814a) A large-scale plantation survey showed that *Meloidogyne* sp., *Pratylenchus* sp. and *Trichodorus* sp. are the most harmful to sugar-cane plants. Other species found included *Helicotylenchus* sp., *Radopholus* sp. and *Paratylenchus* sp. D–D, dibromochloropropane, EDB and methyl bromide are used extensively as pre-plant treatments. EDB was found to be the least successful for the control of *Helicotylenchus* sp. and *Meloidogyne* sp. Martin *et al.* describe the use of D–D at 40 U.S. gal. per acre, in experiments with susceptible and non-susceptible varieties of sugar-cane. Only the susceptible variety, grown in soil with a high nematode population, responded with yield improvement to D–D fumigation. J.E.P.

815—Report. Northern Counties Animal Diseases Research Fund. Newcastle.

*a. THOMAS, R. J., 1956.—" The *Nematodirus* problem." 17th (1956), 14 pp.

816—Research Bulletin of the Hokkaido National Agricultural Experiment Station.

a. ICHINOHE, M. & ASAI, K., 1956.—[Studies on the resistance of soybean plants to the nematode, *Heterodera glycines*. 1. Varieties 'Daiichi-hienuki' and 'Nangun-takedate'.] No. 71, pp. 67–79. [In Japanese: English summary p. 79.]

(816a) Two resistant and two susceptible varieties of soya beans were tested in soils equally inoculated with *Heterodera glycines*. The resistant varieties, "Daiichi-hienuki" and "Nangun-takedate" showed no stunting or reduced yield, whereas the susceptible varieties, "Kokusô" and "Tokachi-nagaha", suffered severe disease symptoms and yield reduction. Resistance took the form of failure of the majority of within-host larvae to survive. The root systems of the resistant plants were large with a higher density of root nodules than occurred on the susceptible varieties, though most plants grown in infested soil had fewer root nodules than normal. C.C.D.

817—Revista da Associação Médica Brasileira.

a. CALVALCANTI, J. S. & MENEZES, H., 1956.—"Um caso de fibroma do mediastino com pseudo-tuberculos esquistossomoticos." **2** (4), 336–340. [English summary p. 340.]
b. BOGLIOLO, L., 1956.—" O porto-radiograma post-mortem na esquistossomiase mansonica hepato-esplenica. (Nota previa)." **2** (4), 379–385. [English summary pp. 384–385.]
c. BOGLIOLO, L., 1956.—" O peso do figado e do baço na esquistossomiase mansonica hepato-esplenica e na doença de Morgagni-Laënnec." **2** (4), 386–392. [English summary p. 392.]

(817b) Continuing his series of studies on Brazilian cases of the Symmers type of hepato-splenic schistosomiasis mansoni, Bogliolo investigated the post-mortem portal radiogram in a single case, which could be exactly superposed to a plastic mould of the portal tree. The latter was identical with those obtained in 24 other cases of the Symmers type previously studied. The material was compared with that obtained from eight cases of Morgagni-Laennec's cirrhosis, a case of post-hepatic cirrhosis, three cases of malignant blastoma of the liver, and a chronic cardiac liver. The author concludes that the Symmers form of liver cirrhosis found in hepato-splenic schistosomiasis mansoni can be distinguished from other pathological conditions of the liver *intra vitam* by the existence of a newly formed vascular network of dichotomous branches accompanying the branches of the portal tree; by the conservation of the normal and general architecture of the tree, without lacunae, subversions or amputations; and by the fact that both monpodous and dichotomous branches with a normal course lack distortion, deviation or twisting. [See also Helm. Abs., **23,** No. 259b; **24,** No. 813a.] J.M.W.

(817c) In the effort to determine whether differences exist in the weight (and therefore volume) of the liver and spleen in hepato-splenic schistosomiasis and Morgagni-Laennec's

cirrhosis, Bogliolo weighed the liver in 17 cases and the spleen in 38 cases of the former disease, and both liver and spleen in 25 cases of the latter. He found that enlargement of both organs was significantly more frequent in hepato-splenic schistosomiasis than in Morgagni-Laennec's cirrhosis, and concludes that functional changes connected with the anatomical change in the spleen must also be more marked in schistosomiasis. J.M.W.

818—Revista Brasileira de Cirurgia.

a. SCHEIDELMANTEL, R. & DIAS, S. S., 1956.—" Um caso de colecistite esquistosomótica." **32** (1), 111–114. [English, French, German & Portuguese summaries p. 114.]

819—Revista Brasileira de Gastroenterologia.

a. SCHMITT, K., 1956.—" Considerações sôbre a chamada 'apendicite esquistossomótica'." **8** (3), 161–168. [German summary p. 168.]
b. PEREIRA, O. A., AMORIM, E., COSTA, A. F. DA & BARRETTO NETTO, M., 1956.—" Obstrução duodenal por *Strongyloides stercoralis*." **8** (6), 345–356. [English summary pp. 355–356.]

820—Revista Brasileira de Medicina.

a. NIVALDO, J., 1956.—"O hexylresorcinol no combate à infestação ancilostomótica." **13** (8), 626–627.
b. MANDARINO, E., 1956.—" Incidência de verminose em 492 exames coprológicos." **13** (9), 667–668.
c. NÓBREGA, H., 1956.—"Tricocefalose." **13** (10), 739–743. [English summary p. 743.]
d. FONTOURA, C., 1956.—"Contribuição para a história das verminoses no Brasil." **13** (12), 910–913.
e. COUTINHO, A. B., 1956.—"Questões práticas sôbre esquistossomose." **13** (12), 919–924.

(820b) Graham's method for the detection of *Enterobius* was used on 262 individuals in São Paulo and *Enterobius* was found in 67, hookworm in 14, *Ascaris* in eight and *Taenia* in seven. The examination of 230 persons by Willis' concentration method detected hookworm in 150, *Ascaris* in 17, *Taenia* in five, *Enterobius* in four and *Trichuris* in four. M.McK.

(820c) Nóbrega reviews the clinical picture resulting from infection with *Trichuris trichiura*, the methods of diagnosing and treating infection and the incidence in various parts of Brazil. M.McK.

(820d) This is a speech to graduating students in which Fontoura quotes part of a character study by Silva Mello of A. O. de Almeida, a pioneer in the fight against hookworm in Brazil, and relates some incidents of his own experience connected with a plan to supply anthelmintics for mass treatment against this disease. M.McK.

(820e) In his answers to five questions put to him at the second Brazilian "jornada" on schistosomiasis at Belo Horizonte in May 1955, Coutinho (i) attributes considerable epidemiological importance to reservoir hosts of schistosomiasis in Brazil, (ii) recommends that control measures should be directed against the free-living stages (cercariae and miracidia) and (iii) gives much detail in support of the view that the presence of dead schistosomes in the body as a result of treatment is more toxic than the presence of live worms. M.McK.

821—Revista Chilena de Pediatría.

a. GAJARDO, R. & ATÍAS, A., 1956.—" Tricocefalosis masiva infantil." **27** (3), 121–122. [English summary p. 122.]

822—Revista Colombiana de Pediatría y Puericultura.

a. CAMACHO GAMBA, J. & GUTIÉRREZ R., G., 1956.—" El uso de algunos vermífugos en la parasitosis." **15** (3), 161–177.

(822a) Camacho Gamba & Gutiérrez report on the efficacy of some anthelmintics used in the treatment of eight children in hospital with severe anaemia and emaciation. Four

techniques were used concurrently in the egg counts. They were those of Willis, Fresco, Stoll and Faust. The number of parasites present was established by the following formula: Number of parasites $= \frac{\text{number of eggs per gm. hard faeces}}{\frac{1}{2} \text{ number of eggs per female per gm. dry faeces}}$. It is based on the assumption that there is a male to every female. On admission the children harboured altogether 720 specimens of *Necator*, 1,022 specimens of *Trichuris* and 24 ascarids and they were treated with various combinations of hexylresorcinol, leche de higueron, Uncinacina, Hexenol, verminol and chenopodium potion. Higuero latex did not have any effect against *Necator*. At the time of discharge the children still harboured 520 specimens of *Necator* and 187 specimens of *Trichuris* but no ascarids, the last-mentioned having proved least refractory to treatment. N.J.

823—Revista Cubana de Pediatría.

a. ABALLÍ, A. J., VILLA CAMPOS, J., TORROELLA, Jr., E., MARÍN CUETARA, R. & GARCÍA PALACIO, A., 1956.—" Granuloma parasitario intraperitoneal por *Ascaris lumbricoides*." **28** (3), 143–150. [English summary p. 150.]

824—Revista da Faculdade de Medicina Veterinária. São Paulo.

a. FERRI, A. G. & SALIBA, A. M., 1956.—" Lesões aórticas produzidas por *Spirocerca lupi* (Rudolphi, 1809) Nematoda, Spiruroidea, em cães." **5** (4), 587–592. [English summary pp. 591–592.]

b. CAMPOS, M. S. DE, 1956.—" Nota preliminar sôbre o emprêgo da piperazina no tratamento da ascaridíase das galinhas." **5** (4), 593–599. [English summary p. 598.]

(824a) Ferri & Saliba have found 75 cases of aortic lesions due to *Spirocerca lupi* in 1,661 dogs which were examined post mortem. The lesions appear as small sacciform dilatations of the wall of the aorta; these may rupture resulting in haemorrhage and death of the dog or, in some cases, they may become ossified. All of the cases examined also showed oesophageal lesions. Histological examination shows that in the affected area the muscular and elastic fibrous tissues are replaced by a dense connective tissue which may become hyaline and subsequently ossified. C.W.

(824b) Campos briefly reviews the literature on the uses of piperazine as an anthelmintic and then reports the results of a trial of this drug against *Ascaridia galli* in chickens. The chickens were artificially infected at the age of two months and divided into four batches of 20. About eight weeks after infection treatment with a 10% solution of piperazine hexahydrate was begun. One batch received a single dose of 0·25 gm. per bird, the second, 0·375 gm. divided into three equal doses given on alternate days, the third received a total dose of 0·24 gm. per bird, again divided into three equal parts administered on alternate days and the fourth batch was used as controls. Subsequent examination of the birds revealed complete elimination of the worms in the two batches which had received the divided doses while a single worm survived in one bird which had had a single dose. The control batch showed an average infection of 3·8 worms per bird. The drug did not appear to have been effective against a species of *Hymenolepis* with which some of the birds were infected. C.W.

825—Revista de la Facultad de Medicina. Bogotá.

*a. ALBORNOZ PLATA, A., 1956.—" Ulcera gastro duodenal y parasitósis en Bogotá, D.E." **24** (8), 723–728.

826—Revista del Hospital del Niño. Lima.

a. JIMÉNEZ GARCÍA, R., 1956.—" Oclusión intestinal por *Ascaris lumbricoides*." **18** (67), 227–248.

(826a) Jiménez García gives a general account of *Ascaris lumbricoides* infection with particular reference to the production of intestinal occlusion and subsequent surgical intervention, accompanying his remarks with notes on five cases. J.M.W.

827—Revista Médica de Chile.

a. FIGUEROA, L., CASANUEVA, M. & CUMSILLE, E., 1956.—" Distomatosis de las vías biliares." **84** (10), 561–564. [Discussion p. 564.]

828—Revista Médica Hondureña.

*a. ADÁN CUEVA, J., 1956.—" Cisticercosis en Honduras." **24** (4), 101–111.

829—Revista de Medicina Pinareña.

*a. BASNUEVO, J. G., 1956.—" Diarreas de etiología parasitaria en el niño. Nuevos avances en le diagnóstico y tratamiento." **3** (26), 110.

(829a) [This paper also appears in *Rev. Kuba Med. trop.*, 1957, **13**, 5–14. For abstract see Helm. Abs., **26**, No. 286b.]

830—Revista de Medicina Veterinaria. Montevideo.

a. SZYFRES, B., 1956.—" El problema de la hidatidosis en el Uruguay. Proyecto de creación de un Fondo Nacional de Lucha contra la Hidatidosis." **9** (56), 73–81.

(830a) Uruguay is considered to be the country with the highest incidence of hydatidosis. According to Maccas (World Congress of Hydatidosis, 1951) 17·4 per 100,000 of the population are in hospital because of hydatidosis. Of 952,391 persons whose chests were examined by X-ray between 1951 and 1954, 38·2 per 100,000 had pulmonary hydatid hence the actual incidence must be higher since the liver is a commoner site than the lung for infection. The presence of the disease is favoured by the large numbers of sheep, cattle and dogs in the countryside and the deeply rooted custom of feeding dogs with raw entrails. The efforts made by the government to control the disease include the application of trial control measures in a limited area since 1954. Szyfres suggests, and describes the working of, a national fund to cover the cost of a control scheme and of incentive payments to farmers. M.MCK.

831—Revista Paulista de Medicina.

a. SPINA-FRANÇA, A., 1956.—" Cisticercose do sistema nervoso central. Considerações sôbre 50 casos." **48** (1), 59–70. [English summary pp. 68–69.]

832—Revista del Servicio Nacional de Salud. Santiago.

a. NEGHME R., A. & SILVA C., R., 1956.—" Distribución y frecuencia de las enteroparasitosis en Chile." **1** (2), 131–154.

(832a) Neghme & Silva investigated 17,219 persons from 108 localities between 18°S and 55°S for intestinal parasitism by single faecal examination. The incidence of infection was not affected by sex but diminished with increasing age. *Ascaris lumbricoides* and *Trichuris trichiura* infection showed positive correlation with atmospheric humidity—in the arid north incidence was low, but in more humid areas, such as Chiloé Province, it could reach 50% to 60%. *Hymenolepis nana* infection was apparently associated with the occurrence of rats and was more common in the north and centre of the country (9%–10%) than in the south (0·53%–1·3%). Factors contributing to the high incidence of intestinal parasitism in the country as a whole were: (i) availability of potable water to only 25% of the population; (ii) promiscuous defaecation, especially in rural areas; (iii) transmission of infection through the agency of irrigation water; (iv) the high proportion of illiterates in the population, particularly those engaged in agriculture. Infection with the following helminths was also encountered: *Taenia saginata*, *T. solium*, *Hymenolepis diminuta*, *Diphyllobothrium latum*, *Dipylidium caninum*, *Fasciola hepatica* and *Enterobius vermicularis*. These infections have been dealt with in part already and will be further dealt with in future publications. The paper is illustrated by eight tables and five graphs. J.M.W.

833—Revue Belge de Pathologie et de Médecine Expérimentale.

a. SCHWETZ, J., 1956.—" Sur l'importance spéciale d'une terminologie zoologique précise pour les maladies tropicales en général et pour la bilharziose en particulier." **25** (4), 314–317.

(833a) Schwetz makes a plea for the rationalization and simplification of the taxonomy and nomenclature of the planorbid snails which transmit schistosomiasis. J.M.V.

834—Revue Internationale d'Hépatologie.

*a. CATTAN, R., 1956.—" La distomatose hépatique en France." **6** (6), 749–768.
*b. GHALIOUNGUI, P., 1956.—" La bilharziose hépato-splénique." **6** (6), 797–809.
*c. BLANC, F., 1956.—" Aspects en France de la bilharziose hépato-splénique." **6** (6), 811–886.

835—Revue de Pathologie Générale et de Physiologie Clinique.

a. FLORIO, R., LABOUCHE, C., COTTEREAU, P., SAUVAJON, G. & FLOCHON, G., 1956.—" A propos de l'activité anti-allergique d'un extrait de sangsue." **56** (677), 635–640.
b. GUILHON, J. & LOGÉ, G., 1956.—" Le parasitisme du dioctophyme rénal dans le département de la Loire-Inférieure." **56** (683), 1911–1919. [English & Spanish summaries pp. 1918–1919.]
c. KERNEIS, J. P., MONROTY, A., TRICHEREAU, R., BRUNEAU, Y. & CHARENTON, J., 1956.—" Contribution à l'étude de la strongylose pulmonaire du mouton, ses relations avec le tuberculose." **56** (683), 1927–1937. [English & Spanish summaries p. 1937. Discussion pp. 1937–1940.]

(835a) Florio *et al.*, experimenting with dogs, found that whereas the leech extract Hirudex confers but feeble protection against the effects of histamine, it protects efficaciously against the hypotensive effects of acetylcholine. This leads to the deduction that those cases of allergic eczema and pruritus in which treatment with leech extract is more effective than antihistamine therapy are due to local liberation of acetylcholine, not histamine. J.M.W.

(835b) Guilhon & Logé review renal dioctophymosis in France. 41 cases of infection have been reported in dogs, and four in human beings. All of these cases were found in the western part of the Lower Loire region, between the Loire estuary, the Redon marshes and Grande Brière. Lesions, diagnosis, prognosis, treatment and prophylaxis are briefly considered. J.M.W.

(835c) Bacteriological examination of 60 sheep suffering from pulmonary strongylosis revealed concurrent tuberculosis in four of them. The authors give histopathological observations and speculate concerning the relationships of these two infections. [The species of lungworm responsible for the strongylosis is not stated in the paper; but in the report of the discussion which follows it is stated that the bronchial lesions described were more likely to be due to *Muellerius minutissimus* than to *Protostrongylus rufescens*.] J.M.W.

836—Revue du Praticien. Paris.

a. COLLOMB, H. & MILETTO, G., 1956.—" Filariose lymphatique." **6** (8), 839–850.

837—Rivista di Neurologia.

a. ARGENTA, G., 1956.—" Su di un caso di cisticercosi generalizzata con sindrome di adenoma ipofisario." **26** (2), 197–204.

838—Roczniki Nauk Rolniczych. Seria A. Roślinna.

a. WILSKI, A., 1956.—" Obserwacje nad biologią mątwika ziemniaczanego (*Heterodera rostochiensis* Wr.) oraz próby jego zwalczania środkami chemicznymi." **73** (2), 245–288. [English & Russian summaries pp. 284–288.]

(838a) Wilski found that the length of the life-cycle of *Heterodera rostochiensis* in Bydgoszcz and its environs depended largely on soil temperatures and varied from 53 to 75 days under field conditions. There was no evidence of more than one generation per year.

Larvae emerged from the neck and vulval openings of the cyst, and occasionally through the cyst wall. The most rapidly growing rootlets were most heavily attacked, but use of the spear to aid in penetration of the rootlet was not observed. Development of females on potato roots grown in agar at 18°C. to 23°C. lasted 38 to 46 days, of males 20 to 26 days. Formation of eggs within the female was observed to take place after the female began to turn yellow. Development of females on potato tubers was noted. Chemical control was attempted with forbiat (methyl ester of dithiocarbamic acid), dichloroethane, tetrachloroethane, paradichlorobenzene, undistilled benzol products and BHC, D.D.T. and chlordane preparations. Forbiat (at one ton per hectare) completely protected potato plants against attack, but it did not kill the contents of the cysts in the soil. None of the other chemicals was effective when applied one to three weeks before planting. R.D.W.

839—Sang.

a. NUNZIANTE CESARO, A. & GRANATA, A., 1956.—" Cytoanalyse chimique quantitative des leucocytes dans le sang périphérique au cours de l'ankylostomiase." **27** (6), 593–597.

(839a) Quantitative cytochemical analyses of the leucocytes in the peripheral blood in ten cases of ancylostomiasis duodenale has shown that: there is a diminution of polysaccharide in the neutrophil granulocytes and in the monocytes; the polysaccharide content is lowest in the eosinophil granulocytes; desoxyribonucleic acid content is slightly increased in the neutrophil granulocytes, monocytes and lymphocytes and slightly decreased in the eosinophil granulocytes; the ribonucleic acid in both nucleus and cytoplasm is moderately diminished in neutrophils, eosinophils and lymphocytes but is augmented in the monocytes. The results are tabulated and shown graphically. S.W.

840—Sborník Československé Akademie Zemědělských Věd. Veterinární Medicina.

a. ČERVENKOVÁ, I., 1956.—" Toxicita askaridinů získaných různým způsobem u některých laboratorních zvířat. Výroba lipoidní frakce a titrace její toxicity na bílých myškách a králících." **29** (2), 99–112. [English, German & Russian summaries pp. 111–112.]
b. DVOŘÁK, R., 1956.—" Příspěvek k zjišťování příčin hynutí transportovaných a komorovaných koroptví." **29** (2), 113–132. [English, German & Russian summaries pp. 131–132.]
c. KOULA, V. & VESELÁ, O., 1956.—" Studium účinků chlorovaných uhlovodíků a některých derivátů substituované kyseliny karbaminové proti skřkavce veprové *Ascaris suum* Goeze in vitro." **29** (3), 175–188. [English, German & Russian summaries pp. 187–188.]
d. WILLOMITZER, J., 1956.—" Výskyt střevních cizopasníků u holubů v Brně." **29** (4), 293–300. [German & Russian summaries p. 300.]
e. ŠLESINGER, L., 1956.—" Ascaridosa psů a pokus o její lečení některými v ČSR málo vžitými anthelmintiky." **29** (5), 301–308. [English, German & Russian summaries p. 308.]
f. DYK, V. & LUCKÝ, Z., 1956.—" Parasitární hynutí hrouzků obecných (*Gobio gobio* L.)." **29** (5), 335–338. [German & Russian summaries p. 338.]
g. ČERVENKA, R., 1956.—" Vliv askaridinů na morfologický obraz krve u pokusných zvířat." **29** (5), 353–370. [English, German & Russian summaries pp. 369–370.]
h. SURYNEK, J., 1956.—" Vliv bílkovinného extraktu z askarid na organismus psa." **29** (7) 477–488. [English, German & Russian summaries pp. 487–488.]
i. MOKOŠIAK, J., 1956.—" Parazitárne vyšetrenie potkanov v Brne." **29** (7), 489–508. [English German & Russian summaries pp. 505–508.]
j. RADOŠ, J., 1956.—" Příspěvek k zjišťování hynutí komorovaných a ke komorování určených bažantů." **29** (7), 517–524. [English, German & Russian summaries p. 524.]
k. JANŠA, V., 1956.—" Příspěvek k průzkumu regionálního výskytu střevních parasitů u zajíců." **29** (8), 595–600. [English, German & Russian summaries p. 600.]
l. LEBDUŠKA, J., ŠIMŮNEK, J., BÁLEK, V. & HAKOŠ, J., 1956.—" Účinnost některých rostlin na škrkavky in vitro." **29** (9), 661–670. [English, German & Russian summaries pp. 669–670.]
m. ŠIMŮNEK, J., LEBDUŠKA, J., CHLÁDEK, M. & KOŠOVÁ, V., 1956.—" Získání anthelmintícky účinného *Oleum chenopodii* z některých odrůd merlíku vonného u nás rostoucích." **29** (9), 671–682. [English, German & Russian summaries pp. 680–682.]
n. LEBDUŠKA, J., ŠIMŮNEK, J. & BOURA, J., 1956.—" Účinnost česneku, křenu a merlíku vonného pri askaridose prasat." **29** (9), 683–692. [English, German & Russian summaries pp. 690–692.]

o. ŠLESINGER, L., 1956.—" Piperazin jako ascarifugum u psů." **29** (11/12), 957–964. [English, German & Russian summaries pp. 963–964.]

(840a) Červenková reports on her own experiments on the toxicity of the lipoid fraction of ascarid whole worm extract, and describes her method of separating lipoid and albuminoid fractions. Intraperitoneal injections of the lipoid fraction into white mice produced first signs of toxicity (agitation and anorexia) at a concentration of 20% and at a dose level of 0·3 ml. The lethal dose was established at 0·4 ml. to 0·5 ml. ($^1/_{50}$ body-weight) at the above concentration of the extract, death occurring in all 19 experimental mice within one to four days. Rabbits first showed transient toxic symptoms at a dose level of 7 ml., while in those which received 20 ml. ($^1/_{50}$ body-weight) there was agitation, pyrexia and anorexia lasting for four days. N.J.

(840b) Dvorák reports that out of 106 partridges examined, which died while being crated or transported, 10·3% were found to carry the eggs of the following cestode genera: *Raillietina*, *Choanotaenia*, *Hymenolepis* and *Davainea*; 12·2% were infected with *Heterakis gallinae*, 0·94% with *Syngamus trachea* and 11·3% with *Capillaria caudinflata*. N.J.

(840c) Koula & Veselá report on the study of the efficacy of chlorinated hydrocarbons, carbamates and other anthelmintics against *Ascaris suum* in vitro. Out of 44 drugs tested by their *in vitro* effect on the parasites, both by kymography and the length of survival, p-dimethyl-anilinotrichlorethanolhydrochloride, hexachlorpropen, p-benzylphenol-carbamate and p-benzylphenol-ethanolaminocarbamate were the most effective. The efficacy of the drugs was compared with that of hexylresorcinol and thymol by the kymographic method. The results are tabulated and the myograms are reproduced. [The figures do not lend themselves to abstracting.] N.J.

(840d) Willomitzer reports that the incidence of infection with the following parasites in 500 pigeons examined in Brno was as follows: *Ascaridia columbae* 6·0%; *Capillaria columbae* 5·4%; *Raillietina* sp. 2·2%; *Strongyloides* sp. 1·4%; *Aporina delafondi* 1·0%; *Harmostomum* sp. 1·2%; *Syngamus trachea* 0·2%. 7·8% of birds carried mixed infections of two to three of the above helminth species. The author remarks that the incidence of infection was lower in well fed, home-bred birds. N.J.

(840e) Šlesinger discusses the development of toxascariasis in dogs. The following drugs were found to be effective in the therapy of this infection: (i) carbon tetrachloride *per os* in a single dose of 200–400 mg. per kg.; (ii) tetrachlorethylene *per os* in a single dose of 300 mg.; (iii) chenopodium oil in a single dose of one to two drops per month of age given on animal charcoal; (iv) toluene in a single dose of 0·2 c.c.–0·3 c.c. per kg. administered by gastric intubation; (v) hexylresorcinol *per os* in a single dose of 0·1 c.c. per kg. N.J.

(840f) Dyk & Lucký report on the mortality of gudgeon in a pond in the Moravice valley. Pathological symptoms consisted of an increased quantity of mucus on the skin and gills, cyanosis of the latter, loss in weight and difficult respiration. Post-mortem examination revealed the presence of *Gyrodactylus elegans*, and *Dactylogyrus cryptomeres*. N.J.

(840g) Červenka discusses the influence of the lipoid fraction of whole worm extract of *Ascaris* on the morphological blood picture in rabbits. 12 animals were divided into four groups. The control animals (first group) received 5 ml. of linseed oil. Those of the second group received 3 ml. of a 20% concentration of the lipoid fraction of *Ascaris* extract. This dose was increased to 7 ml. and 20 ml. in the third and fourth groups respectively. The results are tabulated and it is concluded from them that as a consequence of administering this extract there was an absolute increase in the number of leucocytes (up to 26,290 per cu. mm.) with relative increase of lymphocytes (up to 84%) and eosinophils (to 6·5%). The haemoglobin level did not show any significant change. N.J.

(840h) Surynek discusses the influence of the albuminous fraction of whole ascarid extract, prepared from *Ascaris suum* by Melcher's method, on dogs. Ten dogs, five of which were infected with *Toxocara canis*, showed the symptoms of anaphylactic shock within one minute of intravenous injection of 0·025 ml. to 0·05 ml. of the extract. Two animals free from infection died within 17 minutes while one showed only a mild reaction. Thus anaphylactic shock occurred even in those dogs which were uninfected at the time of the experiment. Possible reasons for this state of affairs are discussed. Anaphylactic shock reappeared after the experiment had been repeated 12 days later. N.J.

(840i) Mokošiak reports that of 300 rats examined in Brno 23% were infected with *Hymenolepis fraterna*, 10·67% with *H. diminuta*, 11·3% with *Cysticercus fasciolaris*, 0·67% with *Capillaria hepatica* and 5·67% with *C. intestinalis*. N.J.

(840j) Radoš reports that the loss of 9·2% of 108 pheasants during transportation and crating was due to *Heterakis gallinae*, which was found in 26·85% of the total number of the birds, *Capillaria contorta* and *C. caudata* parasitizing 22% of them. Mild infection with *Syngamus trachea* was found in 1·85% of the birds. N.J.

(840k) Janša reports that out of 60 hares examined in southern Moravia 33·3% were found to be infected with *Trichostrongylus retortaeformis* and 16·6% with *Trichuris leporis*. One animal harboured *Cittotaenia pectinata*. N.J.

(840l) Lebduška *et al.* discuss the efficacy of some plant extracts against *Ascaris suum*, using concentrations ranging from 1 : 10 to 1 : 200 in 0·9% sodium chloride solution. The extracts were tested on 15 to 30 worms *in vitro*. Their effect was compared with that of 1 : 1,000 sodium fluoride solution in which all 60 worms died within 27 hours, and with that of physiological salt solution in which all the worms were still alive after 72 hours. In a concentration of 1 : 100 the percentages of worms killed in less than 72 hours by the tested plant extracts were as follows : *Chenopodium ambrosioides*, 80%; *Hypericum perforatum*, 76.7%; *C. polyspermum*, 56·6%; *Tanacetum balsamita*, 56·5%; *C. bonus henricus*, 40%; *T. vulgare*, 30%; *Artemisia vulgaris*, 26·6%; *Daucus carota*, 13·3%; *C. album*, 10%; *Monarda didyma*, 10%; *Solidago virgaurea*, 6·7%; *Nepeta tuberosa* and *Buddleia davidi*, 3·3% each. *Folium juglandis* was completely ineffective. N.J.

(840m) As a result of comparative tests Šimunek *et al.* conclude that volatile oils extracted from the indigenous variety of *Chenopodium ambrosioides* were slightly more effective in the elimination of *Ascaris suum* from pigs than oils extracted from locally grown *C. ambrosioides* var. *anthelminticum*. N.J.

(840n) Lebduška *et al.* report on the efficacy of certain plants against *Ascaris* infection. *Chenopodium ambrosioides anthelminticum* leaves given as a 5% mixture with solid food to seven pigs, expelled 37·5% of 72 worms within ten days. 365–400 ml. of chenopodium juice eliminated 1·49% of the remaining worms from the same animals when given in food five days after the first treatment. 2% to 5% of garlic in the food given for 16 days caused the elimination of 10·2% of parasites from six pigs within 16 days while 2% to 10% of horse-radish given also in food and for the same time expelled 5·5% of *Ascaris*. N.J.

(840 o) Šlesinger reports that piperazine citrate was given in tablets to three groups of one to three-month-old dogs. Group one (ten puppies) received 120 mg. per kg. bodyweight; group two (60 puppies) received 150 mg. per kg.; and group three (three puppies) received 200 mg. per kg. The doses were repeated after 24 hours. Coprological examination after eight to nine days showed that in the first group 60% were cured, in the second group 91·7% and in the third group 100%. Most of the worms were eliminated 3 to 23 hours after the first treatment. Side effects in the form of vomiting occurred in 16·6% of the animals which received 150 mg. of the drug for the second time and in all dogs receiving the 200 mg dose. N.J.

841—Sbornik Nauchni Trudove na Veterinarnite Instituti pri Ministerstvoto na Zemedelieto. Sofia.

a. GEORGIEV, B., 1956.—[The biology of *Dictyocaulus filaria*.] **6**, 275–282. [In Bulgarian: English & Russian summaries pp. 281–282.]
b. DENEV, Y., 1956.—[Benzine as an anthelmintic for fowls.] **6**, 283–290. [In Bulgarian: English & Russian summaries pp. 289–290.]
c. MINCHEVA, N., 1956.—[Testing the anthelmintic effect of *Chenopodium ambrosioides* grown in Bulgaria.] **6**, 305–310. [In Bulgarian: English & Russian summaries p. 310.]
d. MINCHEVA, N. & GEORGIEV, B., 1956.—[Study of the helminths of domestic animals.] **6**, 311–316. [In Bulgarian: English & Russian summaries pp. 315–316.]
e. POPOV, T., 1956.—[*Streptocara* infestation in fowls.] **6**, 317–321. [In Bulgarian: English & Russian summaries p. 321.]
f. ENCHEV, S., 1956.—[Mice and rats as *Salmonella* carriers and rats as *Trichinella* carriers.] **6**, 381–388. [In Bulgarian: English & Russian summaries pp. 387–388.]

(841a) Georgiev reports that larvae of *Dictyocaulus filaria* hatched out of embryonated eggs in 24 hours under laboratory conditions. The first moult occurred 24 hours and the second 48 hours after hatching. *D. filaria* larvae of the first, the second and the third stages put into bags with sheep faeces and left outside from the beginning of November till the beginning of March did not survive. Larvae of all three stages kept in water at minimum daily temperatures ranging from −20° C. to −3° C. died by the fifth day. Older larvae showed slightly higher resistance against low temperatures. Larvae in sheep faeces put outside in mid-December exhibited signs of life up to 25th January at temperatures ranging from −20° C. to 10° C. It is concluded that under such conditions *D. filaria* cannot overwinter on pasture. N.J.

(841b) Denev reports that the efficacy of aviation spirit and extraction benzine as anthelmintics was established in an experimental treatment of 65 chickens and a mass treatment of 6,108 fowls. The products were injected into the gizzard in a single dose of 2 ml. to 2·5 ml. Faecal and post-mortem examinations of the experimental group and of 7·2% of birds in the mass treatment group showed that these two products killed 95% of *Ascaridia galli*, 88% of *Heterakis gallinae*, 86% of tapeworms and 50% of *Capillaria columbae*. Automobile and synthetic petrols had similar effects but proved toxic to the host, while the above two products had practically no side effects. Eight days after treatment the egg production was higher than before it. [In the English summary dosages are given in mg. instead of ml.] N.J.

(841c) Mincheva reports that seeds, vegetative parts and oil of *Chenopodium ambrosioides* gave good results in the treatment of ascarid, heterakid and cestode infections in chickens and geese. N.J.

(841d) Mincheva & Georgiev carried out faecal examination of 24,662 sheep, 11,873 cattle, 5,252 horses and 4,560 pigs. *Fasciola hepatica* was found in 10·2% of sheep and 9·65% of cattle, *Dicrocoelium dendriticum* in 21·9% of sheep and 0·35% of cattle, *Paramphistomum cervi* in 0·2% of sheep and 2·7% of cattle, protostrongylids in 19% of sheep and 1·5% of cattle, and trichostrongylids in 74·5% of sheep and 53% of cattle. *Strongylus* sp. and *Trichonema* spp. were present in most of the horses examined. 22·39% of pigs were infected with *Ascaris suum*. N.J.

(841e) Popov discusses *Streptocara pectinifera* infection in chickens. Clinical symptoms and deaths occurred from the end of June until mid-September. Parasites were located in the muscular stomach, lesions occurred in the gastric mucosa and whole, undigested grain was found in the stomach. N.J.

(841f) Enchev discusses *inter alia* the role of *Trichinella* carriers. 2·6% of rats carried *Trichinella* infection. This is connected with the presence of *T. spiralis* in slaughtered pigs. N.J.

842—Sbornik Trudov po Zashchite Rasteni.

*a. EGLITIS, V. K. & KAKTINYA, D. K., 1956.—[An agronomical and zoological study o nematodes in Latvian S.S.R.] Year 1956, No. 1, pp. 67–73. [In Russian.]
*b. RASINYA, B. P., 1956.—[Potato nematode, *Heterodera rostochiensis* Woll. in Latvian S.S.R. Year 1956, No. 1, pp. 75–81. [In Russian.]

843—Science and Culture. Calcutta.

a. SEN, P., 1956.—" Filariasis problem in West Bengal and how to solve it." **22** (6), 297–299.

844—Selskostopanska Misul. Sofia.

a. STOYANOV, D. & GOSPODINOV, G., 1956.—[Gall nematode (*Meloidogyne*) and its control. **1** (9), 548–555. [In Bulgarian.]

(844a) Stoyanov & Gospodinov discuss the taxonomic and ecological characters o *Meloidogyne* and the damage which it causes. It is particularly injurious to tobacco and tomat crops, 60% to 100% of which are destroyed in some cases. Foci of infection should be treate with 1:50 formol solution and crops which are resistant to eelworms should be sown for th next five to six years. Experiments with planting nematode-resistant crops (such as wheat cotton, fodder peas) and preliminary fallowing resulted in the incidence of infection of tobacc planted the following year being only 15% to 24% as compared with 76% in the case of tobacc crops grown on infected land for two successive years. The use of forbiat at 100–150 gm per sq.m., chloropicrin at 150 gm. per sq.m. and carbon disulphide at 500 gm. per sq.m resulted in 98·07% to 99·74% of the plants being healthy as compared with none on th control plots. N.J

845—Semaine des Hôpitaux de Paris.

a. GARIN, C., 1956.—" Sur le traitement de l'oxyurose." **32** (15), 852–853.
b. LÉVI-VALENSI, A. & ZAFFRAN, A., 1956.—" Intérêt de la bronchoscopie pour le diagnosti et le traitement de l'hydatidose pulmonaire." **32** (19), 1058–1066.
c. BACQUÈS, P., 1956.—" Kyste hydatique du foie et ictère." **32** (62), 3210–3214.

846—Shikoku Acta Medica.

a. YAMAGUCHI, T., NISHIMOTO, M. & MURAKAMI, K., 1956.—[*Parafossarulus man chouricus japonicus* (Pilsbry). First record in Shikoku Island.] **9** (4), 50–51. [In Japanese English summary p. 50.]
b. YAMAGUCHI, T. ET AL., 1956.—[Studies on *Gnathostoma* in Shikoku.] **9** (5), 78–88. [I Japanese: English summary pp. 78–79.]

(846a) *Parafossarulus manchouricus japonicus*, the snail host of *Clonorchis sinensis*, wa found in the Ohtsu district of Naruto City and is recorded for the first time from Shikok Island. G.I.P

(846b) The occurrence of *Gnathostoma* in Shikoku was studied. *G. nipponicum* wa present in *Mustela sibirica itatsi* as its only final host and *G. doloresi* infected *Sus scrof leucomystax* (final host) and *Hynobius naevius* (second intermediary). *G. spinigerum* wa found in 12·8% of cats and 5·1% of dogs in Kagawa and its third-stage larvae in *Ophicephalu argus*, *Misgurnus anguillicaudatus* and *Parasilurus asotus* (fish), *Rana nigromaculata* and *R. cates beiana* (frogs), *Natrix tigrina* and *Dinodon orientale* (reptiles), and ten species of birds. Th first human case was discovered in Kagawa in 1953, the chief human vector being *O. argus* G.I.P

847—Sitzungsberichte der Physikalisch-Medizinischen Sozietät zu Erlangen.

a. HEINDL-MENGERT, H., 1956.—" Die Nematodenfauna im Schleimfluss lebender Laub bäume." Year 1954, **77**, 158–176.

(847a) During an examination of the different slime fluxes of deciduous trees, 23 nema tode species were found, nine of which were distinct slime flux nematodes, ten were genera

saprobes and five were soil nematodes. *Anguillula* [=*Panagrellus*] and *Turbatrix* occurred regularly in the white fermenting slime flux and *Diplogaster schneideri* was frequent in brown flux. The nematodes found include the new species *A. ventrodentata* n.sp. found in white oak slime and in brown slime from elm and birch, and *Diplogasteroides quercophilus* n.sp., which was found once in brown oak slime and was successfully cultured on rotten potatoes. It could not therefore be considered a slime flux nematode. G.I.P.

848—South African Medical Journal.

a. WATSON, K. C. & LAURIE, W., 1956.—" Cerebral coenuriasis in the Bantu." **30** (40), 964–965.
b. MARKS, C., 1956.—" The surgical sequelae of bilharzial disease." **30** (45), 1084–1086.
c. LOUW, J. H. & WILKIE, W., 1956.—" Infestation by *Fasciola hepatica*." **30** (48), 1157–1165.

(848a) The case history of larval *Multiceps multiceps* infection of the brain of a woman is recorded. G.I.P.

(848c) The general distribution, clinical features, diagnosis and treatment of *Fasciola hepatica* infections in man and animals are described including two case reports of human infection recently encountered in Cape Town and the Cape Peninsula. G.I.P.

849—South African Practitioner.

a. MARKS, C., 1956.—" Observations on the surgical sequelae of bilharzial disease." **1** (6), 460–470.

850—Sovetskaya Meditsina.

a. SHELYAPINA, T. S., 1956.—[Treatment of patients with diphyllobothriasis.] **20** (8), 75–77. [In Russian.]
b. SHOR, I. Y., 1956.—[A case of cerebral echinococcosis diagnosed as tuberculous meningitis.] **20** (9), 89–90. [In Russian.]
c. SOKOLOV, N. P., 1956.—[Prevention of echinococcosis in conquering new land.] **20** (9), 91–93. [In Russian.]
d. BOGDANOVA, A. S., 1956.—[Dysentery and ascariasis.] **20** (12), 37–41. [In Russian.]
e. KOVALEV, N. E., 1956.—[Combined treatment of patients with taeniasis.] **20** (12), 51–55. [In Russian.]
f. PANTYUKHOV, A. M., 1956.—[Echinococcosis of the mediastinum and of the pericardium.] **20** (12), 62–63. [In Russian.]

(850a) Because of the low tolerance of patients with *Diphyllobothrium* infection to male fern extract, the author used an ether extract in smaller doses of 1·5 gm. to 2·5 gm. to treat 142 adults, 66% of whom subsequently passed worms with scoleces. A laxative is only necessary on the day before dosing. Preliminary application of acrichin raised the efficacy to 80% and is similarly useful in conjunction with pumpkin seeds. G.I.P.

(850e) The use of male fern extract alone in doses of 6·5 gm. per adult gave an efficacy of 86·53% against taeniasis but produced side effects in 65·3%. However, joint application of 3·5 gm. to 4·5 gm. of the extract and 0·4 gm. to 0·5 gm. of acrichin (20 to 30 minutes later) gave an efficacy of 77·36% and side effects only in 10·5%. This method is recommended for mass treatment. G.I.P.

851—Spisy Přírodovědeckou Fakultou Masarykovy University. Brno.

a. ERGENS, R., 1956.—" Příspěvek k poznání cizopasníků ryb Vranovské přehrady." No. 372, pp. 45–52. [German & Russian summaries pp. 51–52.]

(851a) Studying the parasitic fauna of fish from the dam on the river Dije near Vranov, Ergens found the following species which are new for Czechoslovakia, *Dactylogyrus cordus* and *D. similis* on *Leuciscus cephalus*, *D. wunderi* chiefly on *Abramis brama*, and *Ancylodiscoides siluri* and *Proteocephalus osculatus* in *Silurus glanis*. In *D. similis*, a structure was observed in the area of the copulatory organ which may serve as a vaginal support. G.I.P.

852—Srpski Arhiv za Tselokupno Lekarstvo. Belgrade.

a. MILOVANOVIĆ, M. & SRETENOVIĆ, M., 1956.—[Pathology of appendix caused by *Enterobius vermicularis*.] **84** (2), 168–175. [In Serbian: French summary p. 175.]
b. GOSPAVIĆ, J. & POLEKSIĆ, J., 1956.—[*Cysticercus cellulosae* causing rapidly developing parkinsonism.] **84** (6), 803–810. [In Serbian: French summary p. 810.]
c. VUJADINOVIĆ, B., TOMIĆ, L. & GERZIĆ, Z., 1956.—[Gangrenous cholecystitis with biliary peritonitis caused by *Ascaris lumbricoides*.] **84** (10), 1181–1184. [In Serbian: French summary p. 1184.]
d. STOJKOV, N., MILETIĆ-ŠAIN, D. & TOLPA, D., 1956.—[Contribution to the problem of *Fasciola hepatica*.] **84** (11), 1255–1265. [In Serbian: English summary p. 1265.]
e. BRKIĆ, D., 1956.—[Intestinal parasites: helminths. With special reference to newer anthelmintics.] **84** (12), 1401–1416. [In Serbian: French summary p. 1416.]

853—Station Progress Notes. Hawaii Agricultural Experiment Station.

*a. ALICATA, J. E. & KOSHI, J. H., 1956.—" Observations on the stability of phenothiazine in cane molasses for low-level administration to beef cattle." No. 109, 4 pp.

854—Studii si Cercetări de Inframicrobiologie, Microbiologie si Parazitologie. Bucharest.

a. NITZULESCU, V., SORESCU, A. & PANAITESCU, D., 1956.—" Contribuţii la studiul condiţiilor necesare dezvoltării ouălor de *Ascaris* şi trichocefal." **7** (3/4), 553–561. [French & Russian summaries pp. 559–560.]

(854a) From laboratory experiments the authors conclude that eggs of *Ascaris lumbricoides* and *Trichuris trichiura* develop better at 20°C. than at 29°C. or 37°C. and more quickly in 2% agar than in 0·2% agar. The trichurid eggs develop better at 100% humidity but those of *Ascaris* at lower values. G.I.P.

855—Suvremenna Meditsina. Sofia.

*a. BOSHEV, N. & YANKOV, N., 1956.—[Dirofilariasis in Bulgaria.] **7** (5), 97–98. [In Bulgarian.]
*b. MILOSHEV, B., 1956.—[A case of triple infection with *Metastrongylus elongatus*, *Taenia saginata* and *Enterobius vermicularis*.] **7** (11), 94–97. [In Bulgarian.]
*c. BALEVSKI, M., 1956.—[Lung distomiasis and its differential diagnosis from pulmonary tuberculosis.] **7** (12), 51–63. [In Bulgarian.]

856—Thérapie. Paris.

a COUTELEN, F., BIGUET, J., CAPRON, A., DEBLOCK, S. & MINE, L., 1956.—" Contrôle de l'action de quelques antihistaminiques de synthèse dans le traitement de l'oxyurose." **11** (6), 1119–1124. [English & Spanish summaries p. 1124.]
b COUTELEN, F., BIGUET, J., DEBLOCK, S., CAPRON, A. & OBEZ, A., 1956.—" Contrôle de l'action du diguanyl, d'une lactone alantique, de l'hydrate de pipérazine et du phényl-acétate de pipérazine dans l'ascaridiose. Contrôle de la papaine activée dans l'ascaridiose et la trichocéphalose." **11** (6), 1125–1130. [English & Spanish summaries p. 1130.]

(856a) The authors have tested against enterobiasis the four synthetic anti-histamines neo-antergan, multergan, phenergan and allerga (the last two in their usual form and with an enteric coating) in recommended doses with negative results. G.I.P.

857—Tohoku Journal of Experimental Medicine.

a. ASAKURA, S., 1956.—" Crystallographic studies on the eggs of various human parasites I. Observation with polarization microscope." **64** (2), 105–115.
b. ASAKURA, S., 1956.—" Crystallographic studies on the eggs of various human parasites II. Spectroscopy of fertilized *Ascaris* egg shells." **64** (2), 117–120.
c. ATSUMI, T., 1956.—" Experimental formation of gallstones by means of roundworm eggs." **64** (3/4), 243–252.
d. OZAWA, K., 1956.—" Studies on the therapy of schistosomiasis japonica. Report No. 1 On the fate and distribution of antimony in the body under the ordinary-treatment with sodium antimonyl tartrate." **65** (1), 1–9.

e. OZAWA, K., 1956.—"Studies on the therapy of schistosomiasis japonica. Report No. 2. On the Sb concentration in blood and the Sb distribution in organs during the intensive treatments of goats and at the Sb poisoned death of rabbits and on the effects of BAL and hypo and Sb antidotes." **65** (1), 11–21.

(857a) Using polarized light, Asakura studied the crystallographic structure of the shells of the eggs of certain human parasites. He found that in *Trichostrongylus orientalis* and *Ancylostoma duodenale*, which hatch early, the shells showed a low degree of double refraction indicating frail structure, a feature which was also found in the unfertilized eggs of *Ascaris lumbricoides*. The eggs of *Trichuris trichiura* and *Clonorchis sinensis* are thick and show a high degree of double refraction indicating stability. Crystalline shell substance is present under the terminal plugs of the former, suggesting that these structures have considerable inherent strength. The thick shells of *Ascaris* eggs show the highest degree of stability, very strong double refraction being observed in the next to the outermost layer which was found to have radially arranged crystalline structure. The albuminoid membrane may become a nucleus for the precipitation of calcium salts when putrefied, giving importance to the eggs of *Ascaris* occurring in the bile as a centre for the formation of gall-stones. J.M.W.

(857b) Continuing his series of studies on the eggs of various human parasites Asakura subjected the shells of fertilized *Ascaris* eggs to spectroscopic analysis and found that the component elements (calcium, magnesium, silicon, iron, copper and phosphorus) showed a significant similarity to those composing gall-stones. J.M.W.

(857c) Atsumi introduced *Ascaris* eggs surgically into the gall-bladder and bile-ducts of dogs on a normal diet and induced subsequent biliary stasis by ligation and other methods. The eggs were later removed by re-operation and their composition and that of the bile examined. It was found that precipitation of calcium bilirubinate occurred on the eggs in 20% of the experimental animals, whereas no precipitation was observed on foreign bodies similarly introduced into control animals. Fertilized, corticated eggs were most commonly subject to precipitation, the frequency of which was increased by injection of calcium chloride solution with the egg suspension and by ligation of the bile-duct. Precipitation began in the gall-bladder four to five days after introduction of the eggs and in the bile-ducts seven to ten days thereafter. It is concluded that in ascariasis of the biliary tract the eggs are likely to be an important factor in gall-stone formation. J.M.W.

(857d) Ozawa investigated the fate of trivalent antimony in the body following routine administration of stibnal in the therapy of schistosomiasis japonica. He found that to maintain a constant high level of antimony in the blood it was necessary to make injections at twelve-hourly intervals; that at the end of a routine course of 20 injections the blood antimony level was the same as at the beginning; that the concentration of antimony in the portal vein during treatment was always several times higher than that in other veins; that the concentration of antimony in the blood cells was higher than that in the plasma, the difference increasing with lapse of time; that antimony was absorbed in the small intestine and excreted in the urine, saliva, gastric juice, bile and faeces; and that, whereas the antimony concentration was different in the different organs and varied differently with lapse of time, it was consistently highest in the liver. The paper is illustrated by four graphs and two tables. J.M.W.

(857e) Continuing his series of studies on the therapy of schistosomiasis japonica, Ozawa investigated the toxic effects of intensive courses of stibnal and the value of BAL (British Anti-Lewisite) and hypo (sodium thiosulphate) as antidotes. He found that a dose of 20 mg. per kg. body-weight (6·8 mg. per kg. of antimony) was fatal to rabbits within 24 hours, and a dose of 50 mg. per kg. (17 mg. per kg. of antimony) within one-and-a-half hours; that in animals which died from antimony poisoning the concentration was high in the heart and adrenal glands but relatively low in the liver; and that administration of the antidotes led within two hours to an increase in the blood concentration of antimony and a decrease in the concentration in the organs, elimination from the organs being especially marked when BAL and hypo were used successively and the antimony concentration in the organs was high.

He concludes that the two-day intensive course of treatment with stibnal is injurious, but that the shortening of the present long course to 12 days would have no ill effects. In the event of a fatal dose of stibnal being injected, simultaneous use of BAL and hypo would prevent death.
J.M.W.

858—Transactions of the Illinois State Academy of Science.

a. ECKE, D. H. & YEATTER, R. E., 1956.—" Notes on the parasites of cottontail rabbits in Illinois." **48,** 208–214.

(858a) Ecke & Yeatter examined a group of 25 (13 adult and 12 juvenile) Mearns cottontail rabbits, *Sylvilagus floridanus mearnsi*, in central Illinois from August through May, for internal parasites. Ten were infected with larvae of the dog tapeworm, *Taenia pisiformis*, eight with *Obeliscoides cuniculi*, eight with *Cittotaenia* spp. and four with *Trichuris leporis*. The last-named parasite occurred in adult hosts only. In addition, two specimens of *Heterakis* sp. were recovered from one adult rabbit. Worm burden was light. All the animals were fat and healthy.
J.M.W.

859—Transactions of the Kansas Academy of Science.

a. AMEEL, D. J., 1956.—" The maintenance of parasitism." [Presidential address.] **59,** 147–155.
b. ACKERT, J. E., 1956.—" Review of research in parasitology in Kansas during the last century." **59,** 156–192.
c. WILSON, W. D., 1956.—" Notes on cestodes in paddlefish, *Polyodon spathula* (Walbaum), from the Missouri River." **59,** 459–460.

(859c) Wilson examined four specimens of *Polyodon spathula* from the St. Joseph region of the Missouri and found all four to harbour *Marsipometra hastata*, *M. parva* and *M. confusa*.
S.W.

860—Transactions of the Ophthalmological Society of Australia.

a. LIDGETT, K., 1956.—" Hydatid cyst of the orbit: report of a case." **16,** 172–174.

861—Trudi Armyanskogo Nauchno-Issledovatelskogo Instituta Zhivotnovodstva i Veterinarii.

a. GRIGORYAN, G. A., 1956.—[Influence of external environmental factors on the biology and resistance of miracidia and metacercariae of *Fasciola gigantica*.] **1,** Veterinariya No. 9, pp. 93–99. [In Russian.]
b. KHANBEGYAN, R. A., 1956.—[Use of hexachlorethane in fascioliasis of cattle, sheep and goats.] **1,** Veterinariya No. 9, pp. 101–106. [In Russian.]
c. SOGOYAN, I. S., 1956.—[Reparative processes in the liver of sheep after treatment for *Fasciola gigantica* infestation.] **1,** Veterinariya No. 9, pp. 107–112. [In Russian.]
d. SOGOYAN, I. S., 1956.—[Comparison of pathological changes caused in sheep by *Fasciola hepatica* and *F. gigantica*.] **1,** Veterinariya No. 9, pp. 113–117. [In Russian.]
e. GRIGORYAN, G. A., KHANBEGYAN, R. A. & OVANESYAN, A. S., 1956.—[The biology of *Dicrocoelium lanceatum* Stiles & Hassall, 1896. (Preliminary report).] **1,** Veterinariya No. 9, pp. 119–127. [In Russian.]
f. AKOPYAN, V. D., 1956.—[Effect of vitamin A on the resistance of sheep to *Cystocaulus* infection.] **1,** Veterinariya No. 9, pp. 129–136. [In Russian.]
g. SOGOYAN, I. S., 1956.—[Pathological and morphological changes in the lungs of goats (*Capra aegagrus*) naturally infected with *Synthetocaulus davtiani*.] **1,** Veterinariya No. 9, pp. 137–139. [In Russian.]

(861a) In the Ararat area of Armenia *Fasciola gigantica* remains widely distributed among farm animals. Experiments on the influence of external factors representing local seasonal conditions showed that freezing at −2°C. to −4°C. or drying at 2°C. to 4°C. killed all eggs (in faeces or free), but that these survived at 2°C to 4°C. (spring temperature) in moist conditions. Few adolescariae were infective after six months at 16°C. to 21°C. in water, but those maturing were not retarded in egg laying. Of the adolescariae exposed for one month to various summer temperatures and amounts of sunlight, a small proportion remained viable.
G.I.P.

(861b) By means of coprological examinations it was shown that hexachlorethane as a single dose of 0·35 gm. to 0·4 gm. per kg. body-weight cured *Fasciola gigantica* infections in 50% to 79% of cattle, sheep and goats and at a dose of 0·2 gm. per kg., 30% to 50%. The 0·35 gm. to 0·4 gm. dose repeated twice or three times with a two to five-day interval was effective against acute infections and prevented deaths in lambs. G.I.P.

(861c) Sogoyan describes the pathological changes and reparative processes observed in the liver of 20 sheep following treatment with carbon tetrachloride or hexachlorethane 38 to 42 days and 68 to 72 days after experimental infection with *Fasciola gigantica*, and the lesions in five controls which died during the acute stage of the infection. G.I.P.

(861d) During the first 30 days after experimental infection, the pathological picture in sheep was the same for *Fasciola hepatica* and *F. gigantica*. Subsequently, however, acute traumatic hepatitis was observed 45 to 60 days after infection with *F. hepatica* and after 68 to 76 days with *F. gigantica*. *F. hepatica* started to move to the bile-ducts after 68 to 72 days, all having left the parenchyma by the 90th to 95th day. On the 80th to 95th day *F. gigantica* were migrating in the parenchyma causing extensive damage and profuse haemorrhage often with lethal consequences; not infrequently flukes were still found there on the 120th to 130th day. The changes observed in other organs were similar for both species. G.I.P.

(861e) The development of *Dicrocoelium dendriticum* in *Helicella derbentina*, *H. crenimargo* and *Zebrina hohenackeri* requires five-and-a-half to six months. Cercariae leaving the molluscs die within two days in various external media. These larvae, after being swallowed by the second intermediary *Formica rufibarbis*, develop in the abdominal cavity and apparently cannot leave the ants actively. Infection of *Proformica nasuta* was unsuccessful. When metacercariae after 33 to 35 days in the ant were fed to two lambs no infection resulted indicating that this period is insufficient for the metacercariae to become infective. G.I.P.

(861f) Vitamin A increases resistance of sheep to cystocauliasis and depresses the intensity of infections. In sheep experimentally infected with 2,000 *Cystocaulus nigrescens* the vitamin A content of the liver was three times lower, and in individual animals five to six times lower than in uninfected sheep. Among infected sheep, in those with more vitamin A in the liver fewer nodules were present in the lungs, fewer larvae passed in the faeces, more of the worms were encysted in the pleural membrane and the infection tended to be latent. G.I.P.

862—Trudi Biologicheskoi Stantsii "Borok". Moscow.

a. SHIGIN, A. A., 1956.—[On the validity of the genus *Episthmium* (Lühe, 1909) in connection with the description of *E. colymbi* n.sp. from *Colymbus cristatus*.] No. 2, pp. 327–334. [In Russian.]

(862a) Shigin agrees with Bashkirova (1941) that *Monilifer* should be included in *Echinochasmus* as a subgenus. *Episthmium*, on the other hand, should be retained as an independent genus in view of its characteristic localization in the cloaca, the bursa Fabricii and, occasionally, the posterior intestine of birds; its very well developed adhesive apparatus and cuticular spines; and the well developed vitellaria which not only reach beyond the anterior border of the ventral sucker but also fill the median area anterior to it. Shigin transfers *Episthochasmus* to *Episthmium* as a second subgenus to the type and gives diagnoses for *Echinochasmus* and *Episthmium* with keys to their subgenera. *E. colymbi* n.sp., described and figured from *Colymbus cristatus*, differs from the six species in the subgenus *Episthmium* by its well developed collar with large spines and the measurements of its body and organs. G.I.P.

863—Trudi Buryat-Mongolskoi Nauchno-Issledovatelskoi Veterinarnoi Opitnoi Stantsii.

*a. BOGDANOV, A. G., 1956.—[*Bunostomum* infestation of sheep in Buryat-Mongol A.S.S.R.] No. 3, pp. 71–75. [In Russian.]
*b. BOGDANOV, A. G., 1956.—[The epizootiology of *Moniezia* infestation of sheep in Buryat-Mongol A.S.S.R.] No. 3, pp. 76–82. [In Russian.]
*c. BOGDANOV, A. G., 1956.—[The epizootiology of *Dictyocaulus* infestation of sheep in Buryat-Mongol A.S.S.R.] No. 3, pp. 83–93. [In Russian.]
*d. BOGDANOV, A. G., 1956.—[Treatment of *Trichuris* infestation of sheep in Buryat-Mongol A.S.S.R.] No. 3, pp. 94–100. [In Russian.]
*e. BOGDANOV, A. G., 1956.—[*Haemonchus* infestation of sheep in Buryat-Mongol A.S.S.R.] No. 3, pp. 101–110. [In Russian.]

864—Trudi. Gosudarstvenni Nauchno-Kontrolni Institut po Vetpreparatam. Moscow.

a. IVANOVA, Z. I. & KHITENKOVA, L. P., 1956.—[Anthelmintic properties of acrichin and aminoacrichin.] **6,** 302–311. [In Russian.]

(864a) Two acridine derivatives—acrichin [a Russian analogue of mepacrine] and aminoacrichin—were tested against various helminths in sheep. Aminoacrichin had some effect against monieziasis when given in doses of 0·15 gm. to 0·2 gm. per kg. body-weight orally in aqueous solution, followed after two to three hours by a laxative. Immature worms were passed in 28 out of 70 sheep treated, 12 of which were cured. The efficacy is less than that reported for copper sulphate. Aminoacrichin in dilutions of up to 1 : 10,000 depresses the amplitude of contractions of isolated portions of the host intestine and can be retained in the small intestine for up to 24 to 28 hours at fairly high concentrations. Venous injections of 0·012 gm. per kg. given to rabbits were toxic but 0·0075 mg. per kg. caused only transient fall in blood pressure. Both compounds were ineffective against trichostrongyles in sheep and ascarids in pigs. G.I.P.

865—Trudi Instituta Zoologii. Akademiya Nauk Kazakhskoi SSR.

*a. AGAPOVA, A. I., 1956.—[Parasites of fish in reservoirs of western Kazakhstan.] **5,** 5–60. [In Russian.]
*b. GVOZDEV, E. V., 1956.—[Parasitic worms of *Alectoris graeca* Meisner, 1804 in south-eastern Kazakhstan.] **5,** 61–76. [In Russian.]
*c. GVOZDEV, E. V., 1956.—[Parasitic worms of *Coturnix coturnix* from the vicinity of Alma Ata.] **5,** 77–83. [In Russian.]
*d. GVOZDEV, E. V., 1956.—[The helminth fauna of *Ochotona* spp. of Kazakhstan.] **5,** 98–104. [In Russian.]
*e. SOKOLOVA, I. B. & LAVROV, L. I., 1956.—[Helminth fauna of domestic and wild ungulates on the Caspian Plain.] **5,** 105–111. [In Russian.]
*f. ZAKHRYALOV, I. N., 1956.—[Supplements to the description of certain helminths of pigs.] **5,** 112–119. [In Russian.]

866—Trudi Instituta Zoologii i Parazitologii. Akademiya Nauk Kirgizskoi SSR.

*a. GAGARIN, V. G., 1956.—[Epizootiology of *Dictyocaulus* infestation of sheep in Issyk-Kul region, Kirgiz SSR.] Year 1956, No. 5, pp. 135–143. [In Russian.]

867—Trudi Leningradskogo Sanitarno-Gigienicheskogo Meditsinskogo Instituta.

*a. MASOLNIKOVA, T. K., 1956.—[Problem of helminth infection of the population.] **26,** 183–192. [In Russian.]

868—Trudi Moskovskoi Veterinarnoi Akademii.

*a. KORYAZHNOV, V. P. & PESHCHEROVA, O. I., 1956.—[Trichinelloscopy with staining by the Yamshchik method.] **17,** 115–119. [In Russian.]

869—Trudi Saratovskogo Zoovetinstituta.

a. RONZHINA, G. I. & SELIVERSTOV, P. A., 1956.—[Eradication of *Echinococcus*, *Coenurus* and allied helminth infestations.] **6**, 63–69. [In Russian.]
b. RONZHINA, G. I. & BORODULINA, N. A., 1956.—[Pathogenesis, symptoms and pathology of *Coenurus* infestation in sheep.] **6**, 70–76. [In Russian.]
c. RONZHINA, G. I., 1956.—[The part played by wolves in the epizootiology of echinococcosis, cysticerciasis and coenuriasis of animals.] **6**, 77–80. [In Russian.]
d. RONZHINA, G. I., 1956.—[The way in which eggs are freed from proglottides of cestodes from dogs.] **6**, 81–84. [In Russian.]
e. SELIVERSTOV, P. A., 1956.—[Allergic diagnosis of cysticerciasis in sheep.] **6**, 85–89. [In Russian.]

(869a) A three-year campaign for the eradication of helminths (chiefly directed against *Coenurus*) in sheep on an unfavourably affected farm included faecal and allergic examinations of animals, worming of sheep by the usual methods at suitable periods, changes of pasture every five days, provision of hygienic water points and worming of all dogs every 50 days. As a result, infection with *Coenurus* was reduced from 3·7% to 0·8%, with *Echinococcus* from 2·75% to 1·2%, with *Taenia hydatigena* from 80% to 25%, with trichostrongyles from 100% to 10%, and *Dictyocaulus* and *Moniezia* were nearly completely controlled, while wool yields were doubled and the number of ewes produced increased. G.I.P.

(869b) Observation of coenuriasis in 21 sheep leads the authors to define three forms: (i) acute form lasting 15 to 20 days with the appearance of symptoms on the first to tenth day, increased temperature, high pleocytosis, increase in albumin of the spinal fluid, but no changes in the eye; (ii) subacute form lasting 66 to 98 days with the appearance of stagnation in the eye fundus after 41 to 57 days (20 to 25 days before that of characteristic symptoms) and (iii) chronic form lasting 191 to 203 days with the appearance of stagnation after about 100 days and a latent period of 165 to 170 days. Forms (ii) and (iii) are characterized by nearly normal temperature, by pleocytosis and by increased albumin content and pressure of the spinal fluid. Changes in the brain are necrobiotic at the point of localization of the cyst and inflammatory in the perifocal and more removed zones. G.I.P.

(869c) Wolves were shown to contribute to the spreading of cysticerciasis, echinococcosis and coenuriasis of farm animals when on autopsy of 105 wolves in the Saratov Region as many as 36 were found to be infected with *Taenia hydatigena*, five with *Echinococcus granulosus*, four with *Multiceps multiceps* and one with *M. serialis*, while other cestodes present were *Dipylidium caninum*, *T. pisiformis* and *Mesocestoides lineatus*. G.I.P.

(869d) Proglottides of *Multiceps multiceps* when passed with the faeces are capable of moving about 5 to 10 cm., scattering the eggs over the surrounding ground. The eggs are released, during contraction, only at the anterior edge of the segment through narrow canals of the uterine loops which have become exposed during separation from the strobila. *Taenia hydatigena* segments behave similarly. In the case of *Dipylidium caninum* the proglottides do not travel but release egg capsules, through the genital pore only, on to the faeces. In all three species segments are capable of actively crawling from the rectum between defaecations. G.I.P.

(869e) The most effective antigen for the diagnosis of *Taenia hydatigena* in sheep, when injected into the upper eyelid in doses of 0·1 to 0·2 ml., was an emulsion of cysticercus wall and scoleces in 1% saline to which 0·5% carbolic acid solution was added in the proportion of 1:10. It detected the infection in 93% of 40 sheep, three giving an intense reaction (eyelid swelling of 3·8 cm., normal thickness 0·8 cm.) and containing 10 to 22 cysticerci on autopsy and 11 giving a positive reaction (swelling of 1·5 to 3·8 cm.) with one to three cysticerci. In two a reaction was obtained with only *Echinococcus* present. Sterile cyst fluid antigen detected infection in 90·4% of 50 sheep and when preserved with carbolic acid or chloroform retained activity for three months. Diluted cyst fluid, both fresh and when heated to 60°C., was less efficient. G.I.P.

870—Trudi Ulyanovskogo Selskokhozyaistvennogo Instituta.

*a. NEKLYUDOV, V. N., MOISEEVA, V. M., ALBINSKAYA, N. N., DOKTOROV, D. S., SHCHUKIN, L. G., SHUBIN, V. A. & YARIGINA, M. I., 1956.—[On certain biochemical and clinical indicators of the blood in experimental and spontaneous infection of sheep with haemonchiasis.] **4,** 316–328. [In Russian.]

*b. FILIMONOV, M. N. & IVANOVA, M. V., 1956.—[Sodium arsenite as an anthelmintic in parascariasis in horses.] **4,** 337–342. [In Russian.]

*c. KIBAKIN, V. V., 1956.—[Experiment in using turpentine as an anthelmintic for hymenolepidiasis in ducks.] **4,** 383–385. [In Russian.]

871—Trudi Zoologicheskogo Instituta. Akademiya Nauk Gruzinskoi SSR.

*a. KURASHVILI, B. E., 1956.—[The role of wild birds in the spread of helminth invasion among domestic fowl.] **14,** 271–276. [In Russian.]

*b. KOYAVA, L. I., 1956.—[Results of studying worm fauna of nutria on Gardabani and Sukhimi farms.] **15,** 243–246. [In Georgian: Russian summary.]

872—Tunisie Médicale.

a. CHATENIER, L., 1956.—" Kyste hydatique frontal opéré chez une petite européene de cinq ans." **44** (2), 173–175.

873—Türk Ijiyen ve Tecrübî Biyoloji Dergisi.

a. GÜRSEL, A., 1956.—" Türkiye'de Bilharzioz." **16** (3), 195–202. [French summary pp. 200–202.]

874—Türk Tıp Cemiyetí Mecmuası. (Bulletins de la Société Turque de Médecine).

a. EREL, Ş. H. & ŞAŞMAZ, O., 1956.—" Bir hepato-biliyer askaridoz vak'ası." [Case of hepato-biliary ascariasis.] **22** (11), 598–601. [English & French summaries pp. 42, 44.]

875—Türk Veteriner Hekimleri Derneği Dergisi.

a. HAKIOĞLU, G., ÜNEL, S. & ATAMAN, B., 1956.—" Ilk defa olarak bir hindi sürüsünde tesbit edilen *Echinostoma revolutum* (Froelich 1802) vak'ası." **26** (112/113), 2653–2657. [German summary p. 2655.]

b. KURTPINAR, H. & MERDIVENCI, A., 1956.—" Balıkesir bölgesi kaz (*Anser anser dom.*) yavrularında ölüme sebebiyet veren *Hymenolepis setigera* (Froelich, 1789)." **26** (112/113), 2659–2666. [English summary p. 2662.]

c. MERDIVENCI, A., 1956.—" Yurdumuz ehli güvercin (*Columba livia dom.*) lerinde ilk defa olarak bulduğumuz *Aporina delafondi* (Railliet, 1892): Cestoda (fam. Anoplocephalidae)." **26** (118/119), 3126–3131. [English summary p. 3130.]

(875a) *Echinostoma revolutum* is reported for the first time from turkeys in Turkey. The worms were found on autopsy of two out of the ten birds which had died from among 150. G.I.P.

(875b) Mature *Hymenolepis setigera*, which cause deaths among goslings, are recorded for the first time from Turkey. The characteristic features of the worms and various aspects of the infection are briefly noted. G.I.P.

(875c) Merdivenci describes and illustrates *Aporina delafondi* from domestic pigeons (*Columba liva domestica*) and discusses its biology and pathology. This is the first report of *A. delafondi* from Turkey. G.I.P.

876—Uchenie Zapiski. Kalininski Gosudarstvenni Pedagogicheski Institut im. M.I. Kalinina.

*a. GOLOVIN, O. V., 1956.—[The occurrence of parasitism of gnathostomids in reservoir hosts.] **20,** 215–226. [In Russian.]

*b. GOLOVIN, O. V., 1956.—[The distribution of nematodes of the genus *Gnathostoma* in the U.S.S.R.] **20,** 275–282. [In Russian.]

877—Umschau.

a. OSCHE, G., 1956.—" Der Weg vom freilebenden Tier zum Parasiten." **56** (13), 403–405.

(877a) Osche describes for the non-specialist the way in which nematodes have adapted themselves to a parasitic existence after having been at one time entirely free-living. A.E.F.

878—Union Médicale du Canada.

a. BEGIN, B. G., GUY, R. & RAYMOND, O., 1956.—" Kyste hydatique du poumon dans la province de Québec. Deux cas autochtones." **85** (6), 664–671.

879—Växtskyddsnotiser.

a. AHLBERG, O., 1956.—" Några erfarenheter av klorpikrin och metylbromid såsom jordbehandlingsmedel i växthus." Year 1956, No. 5/6, pp. 92–96.

(879a) Ahlberg reports on experiments in the control of *Heterodera rostochiensis* in the soil of tomato green-houses in Sweden. In one series of tests at Kristianstad the following treatments were given (in each case in grammes per square metre): (i) chloropicrin 58; (ii) chloropicrin 50 plus methyl bromide 9; (iii) chloropicrin 0·2 plus methyl bromide 38·8 plus dichlorethylene 84·8; (iv) chloropicrin 3·2 plus methyl bromide 34·4 plus dichlorethylene 96·7. The percentage of dead ova recovered was: (i) 29·2, (ii) 13·7, (iii) 12·2 and (iv) 4·7; in the untreated control area the percentage was 6·5. In the second test at Mälmo treatments were: (i) chloropicrin 55; (ii) methyl bromide 48·5 plus dichlorethylene 145·5; and (iii) methyl bromide 82·5 plus dichlorethylene 247·5. Percentages of dead ova were: (i) 10·1, (ii) 19·9, and (iii) 6·1; in the control area, 9·5. It is concluded that chloropicrin and methyl bromide are not successful against *H. rostochiensis* in green-houses. Steam sterilization is recommended. A.E.F.

880—Věstník Československé Zoologické Společnosti.

a. ERHARDOVÁ, B., 1956.—" První nález vlasovce *Micipsella numidica* Seurat, 1917, na evropském území." **20** (1), 86–87. [German & Russian summaries p. 87.]

(880a) This is the first record in Europe of *Micipsella numidica* which was found in the capillaries of the omentum in *Lepus europaeus*. C.R.

881—Vestnik Khirurgii Imeni Grekova.

a. DIMITROV, S., 1956.—[Treatment of echinococcosis of the lungs.] **77** (7), 71–76. [In Russian: English summary p. 159.]
b. VISHNEVSKI, A. A., 1956.—[Surgical treatment of echinococcosis of the lung.] **77** (11), 74–79. [In Russian: English summary p. 159.]

882—Vestnik Leningradskogo Universiteta. Seriya Biologii.

a. POLYANSKI, Y. I., 1956.—[V. A. Dogel (1882–1955)—obituary notice.] **11** (3), 55–62. [In Russian.]
b. GINETSINSKAYA, T. A., 1956.—[Biological adaptations of the larval stages and the occurrence of parthenogenesis in Trematoda and facilitating the location and infection of their hosts.] **11** (3), 71–84. [In Russian.]

(882b) Ginetsinskaya has collected together literature data dealing with the biological adaptations of trematodes in order to complete their life-cycle, in particular the presence of parthenogenetic stages and the physiological adaptations and acquisition of special organs by larvae to facilitate entry into hosts. G.I.P.

883—Veterinarski Arhiv.

a. DREŽANČIĆ, I. & WIKERHAUSER, T., 1956.—" O djelovanju proteolitskog antihelmintika Vermizyma na askaride psa." **26** (3/4), 86–89. [English & German summaries pp. 88–89.]
b. DREŽANČIĆ, I. & WIKERHAUSER, T., 1956.—" Prilog aksperimentalnoj invaziji mačke i lisice s *Echinococcus granulosus*." **26** (7/8), 179–182. [English & French summaries pp. 181–182.]
c. MIKAČIĆ, D., 1956.—" Otpornost ehinokokovih skoleksa u hidatidi prema nekim fizikalno-kemijskim utjecajima." **26** (7/8), 218–224. [English & French summaries pp. 223–224.]
d. WINTERHALTER, M. & DELAK, M., 1956.—" Liječenje fascioloze svinja supkutanom aplikacijom tetraklormetana (carbonei tetrachloridum). Prethodno saopćenje." **26** (7/8), 225–228. [English & French summaries pp. 227–228.]
e. WINTERHALTER, M. & DELAK, M., 1956.—" Parenteralna aplikacija tetraklormetana (carbonei tetrachloridum). IV. Supkutana aplikacija tetraklormetana kod konja." **26** (11/12), 299–306. [English & French summaries pp. 305–306.]
f. WINTERHALTER, M. & DELAK, M., 1956.—" Parenteralna aplikacija tetraklormetana (carbonei tetrachloridum). V. Supkutana aplikacija tetraklormetana kod goveda." **26** (11/12), 307–312. [English & French summaries pp. 310–312.]

(883a) Drežančić & Wikerhauser gave two to sixteen dragées of vermizym to each of 16 dogs infected with ascarids. At the X-ray and faecal examinations six to seven days after treatment, two animals (15·4%) were found completely free from worms. In another animal in which faecal examination showed no infection one worm was revealed by X-ray examination. The state of infection of all the other dogs remained unchanged. N.J.

(883b) Drežančić & Wikerhauser fed two fertile hydatid cysts of *Echinococcus granulosus* from the livers of freshly slaughtered pigs to each of two cats and two foxes. The latter received one more cyst each five days later. A dog (control), which received one hydatid cyst, eliminated *E. granulosus* eggs on the 57th day after infection and, at autopsy, 75 days after infection, small numbers of adult worms were found. The faeces of the other experimental animals remained negative for 104 days, whereupon autopsy was carried out. At post-mortem examination the cats showed only immature, mostly unsegmented and degenerated worms in the small intestine, while the foxes revealed better developed worms, with one to three segments, but sexually immature. N.J.

(883c) Mikačić reports that *Echinococcus* scoleces from the livers of pigs, the viability of which was checked by the artificial digestion method, retained their infectivity at −2°C. to 2° C. for ten days and at 10°C. to 15°C. for four days. At 20°C. to 22°C. they died in two days and at −5°C. to −12°C. in five days. Saturated sodium chloride solution killed *Echinococcus* scoleces or destroyed their infectivity at 25°C. to 28°C. after eight days, at 16°C. to 24°C. after two days and at 20°C. to 24°C. after 24 hours. N.J.

(883d) Winterhalter & Delak discuss, in a preliminary report, the efficacy of carbon tetrachloride against *Fasciola hepatica* in pigs. A mixture of three parts of carbon tetrachloride and one part of liquid paraffin was injected into the genual fold of 140 pigs. The animals weighed from 15 kg. to 84 kg. and they received 1 c.c.—6 c.c. of the above mixture. In addition to *F. hepatica*, other parasites were present in the pigs, namely: Metastrongylidae, *Oesophagostomum* sp., *Ascaris lumbricoides* and *Globocephalus* sp. The drug was well tolerated by the animals. Five days after the treatment faecal examination revealed no eggs of *F. hepatica* while the number of eggs of other parasites remained unchanged. In the liver of ten slaughtered pigs dead flukes were found. N.J.

(883e) The authors injected subcutaneously a 3:1 mixture of carbon tetrachloride and medicinal paraffin oil in doses of 0·1 c.c. per kg. body-weight in 13 horses with resulting necrosis around the site of injection. Although the changes in the liver after such administration were less than when the drug was given orally this method was not considered suitable for the treatment of horses infected with liver-fluke. The authors describe in detail the clinical condition of their experimental horses and the histological changes in the livers of those animals given carbon tetrachloride orally and subcutaneously. C.R.

(883f) The authors gave subcutaneous injections of a 3:1 mixture of carbon tetrachloride and medicinal paraffin oil or sunflower oil to ten cattle in doses of 0·01 c.c. to 0·03 c.c. In seven cows the mixture was carbon tetrachloride and medicinal paraffin oil and in three carbon tetrachloride and sunflower oil. Necrosis was observed around the injection site. The authors conclude that subcutaneous administration of carbon tetrachloride for treatment of fascioliasis in cattle is not practicable. C.R.

884—Vida Agrícola. Lima.

*a. BAZÁN DE SEGURA, C., 1956.—" Creciente importancia del problema de los nematodes en el algodonero en el Perú." **33,** 435–436.

885—Vie Médicale. Paris.

*a. FRIES, D., 1956.—" Diagnostic des filarioses." **37** (6), 823–824.

886—Voprosi Neirokhirurgii.

a. VOZNAYA, A. T., 1956.—[Laboratory diagnosis of cysticerciasis of the central nervous system.] **20** (6), 35–37. [In Russian.]
b. CHUBINIDZE, A. I. & LYUBARSKAYA, K. V., 1956.—[Clinical aspects and pathological morphology of cerebral cysticerciasis.] **20** (6), 38–40. [In Russian.]
c. MASHANSKI, F. I., 1956.—[Symptom of aversion to sweet and fatty foods in cysticerciasis of the fourth ventricle.] **20** (6), 41–43. [In Russian.]

887—West African Medical Journal.

a. WILSON, C., 1956.—" Combating onchocerciasis with little expense." **5** (4), 162–166.
b. OKPALA, I., 1956.—" The incidence of intestinal parasites among school children in Lagos (Nigeria)." **5** (4), 167–170.

888—West Indian Medical Journal.

a. ROMITI, C., 1956.—" The primary aspect of the disease syndrome of bancroftian filariasis in British Guiana." **5** (2), 113–119. [Spanish summary p. 119.]
b. NEHAUL, B. B. G., 1956.—" Filariasis in British Guiana. Clinical manifestations of filariasis due to *Wuchereria bancrofti*." **5** (3), 201–206. [Spanish summary pp. 205–206.]

889—Wetenschappelijke Mededelingen. Koninklijke Nederlandse Natuurhistorische Vereniging, Amsterdam.

a. SCHUURMANS STEKHOVEN, Jr., J. H., 1956.—" Wormen-vermes. I. Algemeen overzicht." No. 19, 28 pp.

(889a) In this illustrated work, Schuurmans Stekhoven gives a short review of the evolution of Vermes groups, hints for their collection, a key to these groups and keys down to the families of the Nemathelminthes and Platyhelminthes. G.I.P.

890—Wiadomości Parazytologiczne. Warsaw.

a. TARCZYŃSKI, S., 1956.—" Helmintofauna Suidae w Polsce." **2** (4), 211–217. [English & Russian summaries p. 217.]
b. KOZŁOWSKA, J., 1956.—" Z badań nad helmintofauna lisów hodowlanych i dzikich." **2** (4), 219–221. [English & Russian summaries p. 221.]

(890a) [This paper appears in full in *Acta parasit. polon.*, 1956, **4,** 663–779. For abstract see Helm. Abs., **25,** No 330i.]

(890b) The helminths found on examination of 84 breeding foxes and 25 wild foxes were *Metorchis albidus, Pseudamphistomum truncatum, Thominx böhmi, Alaria alata, Capillaria plica, T. aerophilus, Uncinaria stenocephala, Toxocara canis, Toxascaris leonina, Dipylidium caninum, Mesocestoides lineatus* and *Taenia* sp., the first three being new for Poland. G.I.P.

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

c. PAWŁOWSKI, Z. & RYDZEWSKI, A., 1956.—"Piperazyna w ambulatoryjnym leczeniu owsicy." **2** (5), 271–282. [English & Russian summaries p. 282.]
d. GERWEL, C. & PAWŁOWSKI, Z., 1956.—"Spostrzeżenia nad skutecznością hexylresorcinolu w zwalczaniu robaczyc." **2** (5), 283–291. [English & Russian summaries p. 291.]
e. KUŹMICKI, R., DZIĘCIOŁOWSKI, Z. & ALEJSKI, A., 1956.—"Próby stosowania luminalu w celu ewakuacji tasiemca nieuzbrojonego." **2** (5), Suppl. p. 75.
f. DZIĘCIOŁOWSKI, Z., KUŹMICKI, R. & ALEJSKI, A., 1956.—"Próby leczenia zarażeń tasiemcami atebryną i luminalem." **2** (5), Suppl. p. 76.
g. KOŁOWROTKIEWICZ, W., 1956.—"Badania nad występowaniem pasożytów przewodu pokarmowego u dzieci przedszkoli, szkół i domów dziecka z terenu Wielkopolski." **2** (5), Suppl. pp. 77–78. [English & Russian summaries p. 78.]
h. MONIUSZKO-CODROW, A. & STOJAŁOWSKA, W., 1956.—"Owsica w domu małych dzieci w Łabuniach." **2** (5), Suppl. pp. 79–80.
i. CZAPSKI, Z., 1956.—"Próby ustalenia intensywności inwazji glistą ludzką *Ascaris lumbricoides*." **2** (5), Suppl. pp. 81–82.

(890c) Three courses of treatment lasting from three to seven days using piperazine effervescent in doses of 8–20 mg. per kg. body-weight per day or piperazine hexahydrate in doses of 20–50 mg. per kg. per day cured enterobiasis in 51–84% of patients treated. Piperazine effervescent, although more efficient, was accompanied by intestinal upsets probably due to the presence of sodium bicarbonate and tartaric acid. From the results the authors advocate three seven-day courses with piperazine hexahydrate in doses not exceeding 50 mg. per kg. per day separated by rests of ten days. G.I.P.

(890d) Hexylresorcinol in doses of 0·15 gm. to 1·05 gm. per patient according to age cured ascariasis in 42% of 58 treated, trichuriasis in 54% of 143 treated and enterobiasis in 50% of 470 treated (this last result fell to 11·5% in the ninth week after treatment due to reinfection). G.I.P.

(890e) The administration by a duodenal catheter of 0·4 gm. of phenobarbitone in 100 ml. of 1% sodium bicarbonate solution preceded by (on the previous day) and followed by a laxative, cured *Taenia saginata* infections in five out of 18 persons, a further six becoming cured by a second application five to six days later. The treatment is only suitable for hospital application in cases where other anthelmintics cannot be used. G.I.P.

(890f) Thirty out of 35 patients treated by duodenal intubation of 0·3 gm. of atebrin and 0·1 gm. of luminal-sodium in 100 ml. warm water, passed *Taenia* worms with the scoleces. The drug was given on an empty stomach and followed, one hour later, by 300 ml. of 6% magnesium sulphate. The adaptation of this method for use in mobile clinics is now under investigation. G.I.P.

(890g) 71·3% out of 4,796 children from various children's homes and nursery and primary schools in Poland were infected with helminths. These were *Enterobius vermicularis*, *Trichuris trichiura*, *Ascaris lumbricoides* and less frequently *Taenia* sp. and *Hymenolepis nana*. G.I.P.

(890h) In a home for children aged one to three years in the Lublin area, 24% to 27·6% of the children and 28·6% of the personnel were infected with *Enterobius*, the highest number among children's institutions in the area. G.I.P.

(890i) Czapski has shown that faecal examination using Stoll's method (modified) was inaccurate for the determination of the intensity of *Ascaris lumbricoides* infection when compared with the number of worms passed on successful treatment of a person. By the latter method he demonstrated that in the centre of Poznań single worm infections were predominant, while in a village half of the infected persons passed one worm only, one-third passed four to ten worms and one-fifth passed more than ten worms. G.I.P.

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j. KARLEWICZOWA, R., 1956.—" Próby ustalenia intensywności inwazji włosogłówką *Trichuris trichiura*." **2** (5), Suppl. pp. 83–84.

k. IWAŃCZUK, I., 1956.—" Badania ścieków miejskich na obecność jaj ludzkich robaków jelitowych." **2** (5), Suppl. pp. 85–86. [English & Russian summaries p. 86.]

l. IWAŃCZUK, I. & DOŻAŃSKA, W., 1956.—" Wpływ chlorowania na przeżywalność jaj *Ascaris* sp. w ściekach." **2** (5), Suppl. pp. 87–88. [English & Russian summaries p. 88.]

m. DRYGAS, M., 1956.—" Gleba jako źródło inwazji *Ascaris lumbricoides* i *Trichuris trichiura*." **2** (5), Suppl. pp. 89–91.

n. REMBOWSKA-WACHOWSKA, M., 1956.—" Badania nad rolą pasożytów jelitowych w zachowaniu się 'krzywej wagi' u dzieci w różnym wieku." **2** (5), Suppl. pp. 109–110. [English & Russian summaries p. 110.]

o. JEZIORAŃSKA, A., 1956.—" Odczyn uroprecypitacji w diagnostyce wczesnych okresów włośnicy." **2** (5), Suppl. pp. 111–112. [English & Russian summaries p. 112.]

p. KOZAR, Z. & WARDA, L., 1956.—" Poszukiwanie rezerwuaru włośnicy wśród drobnych ssaków Puszczy Białowieskiej." **2** (5), Suppl. pp. 113–115. [English & Russian summaries pp. 114–115.]

(890j) 260 villagers from the province of Poznań were examined for *Trichuris trichiura* using Stoll's method (modified). The most frequent intensity (in 38·8% of the infected) was 100 to 500 eggs in 1 gm. of faeces, while 4·6% passed over 5,000 eggs per gm. The most widely infected were children aged 10 to 15 years and the average intensity was highest (1,500 to 2,300 eggs per gm.) in those aged three to nine years. G.I.P.

(890k) Iwańczuk, assuming that helminth eggs settle out from sewage within one to two hours, used a modification of Berman's funnel and Imhoff's funnel to separate a given amount of the settled matter equivalent to one litre of sewage. Egg samples from this settled matter were then prepared by the method of repeated decantations with zinc sulphate. In 62 litres of Warsaw sewage coming both from the right and left banks of the Vistula, 179 eggs of *Ascaris lumbricoides*, 25 of *Trichuris trichiura*, 11 of *Taenia* sp., six of *Diphyllobothrium latum* and two of *Enterobius vermicularis* were found. G.I.P.

(890l) [A fuller account of this article appears in *Acta parasit. polon.*, 1957, **5** (13/21), 429–448.]

(890m) Soil samples collected principally from the neighbourhood of houses in a number of villages in the province of Poznań were examined by a modification of Spindler's (1929) method. *Ascaris lumbricoides* eggs were recovered from 124 out of 211 samples and *Trichuris trichiura* eggs from 80. The greatest number of contaminated samples came from around latrines, from gardens and from around houses with infected inhabitants. G.I.P.

(890n) Over a period of six months, the loss of weight in 191 children infected with intestinal parasites (various helminths and protozoans) was 3·2 times more frequent than in 96 uninfected ones, and was most frequent in children aged one to three years. Worming of 78 children resulted in their return to normal weight and general good health. G.I.P.

(890 o) Urine taken from rats two to 63 days after experimental infection with *Trichinella* was tested for the presence of antigens by the ring precipitin reaction using immune rabbit serum. The reaction was positive in 26% of the 169 tests made, the greatest number of positive results (36%) being obtained between the second and 21st day of the infection. A positive reaction was similarly given by four of 27 infected persons ten to 25 days after the appearance of clinical symptoms. The author concludes that testing urine for antigens may be applied in the early diagnosis of trichinelliasis, but that the ring precipitin reaction has proved insufficiently sensitive. G.I.P.

(890p) [A fuller account of this article appears in *Acta parasit. polon.*, 1957, **5** (13/21), 481–485.]

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

q. JEZIORAŃSKA, A. & DOBROWOLSKA, H., 1956.—" Odczyny immunologiczne przy askaridozie." **2** (5), Suppl. pp. 117–118. [English & Russian summaries p. 118.]

r. JEZIORAŃSKA, A. & DOBROWOLSKA, H., 1956.—" Modyfikacja odczynów immunologicznych." **2** (5), Suppl. pp. 119–120. [English & Russian summaries p. 120.]

s. MIANOWSKA, Z. & JEZIORAŃSKA, A., 1956.—" Porównanie odczynu wiązania dopełniacza metodą Weinberga i metodą H. J. Bensted'a i J. D. Atkinson'a." **2** (5), Suppl. pp. 121–122. [English & Russian summaries pp. 121–122.]

t. IWAŃCZUK, I., WOŁOWSKA, J. & SOBKOWICZ, H., 1956.—" Wpływ chorób inwazyjnych na system nerwowy dzieci w wieku szkolnym." **2** (5), Suppl. pp. 123–124. [English & Russian summaries p. 124.]

u. DOBKIEWICZ, D. & REMBOWSKA-WACHOWSKA, M., 1956.—" Badania nad skutecznością piperazyny w terapii robaczyc u dzieci i dorosłych." **2** (5), Suppl. pp. 125–126. [English & Russian summaries p. 126.]

(890q) [The information contained in this paper appears to be the same as that published in *Medycyna Doswiadczalna i Microbiologia, Warsaw*, in 1957, **9** (2), 167–177. For abstract see Helm. Abs. **26**, No. 119a.]

(890r) The saline extract (unfractionated) from the heads and germinal layer of hydatid cysts was used in the complement fixation and precipitin reactions on 125 sera from persons in whom undiagnosed cysts had been detected. The complement fixation test was done in two modifications (at 37°C. and 4°C.) on 76 sera, giving positive results in 15 (chiefly by the cold reaction). Six of these were also positive in the precipitin test which gave positive results in 17 out of 86 sera tested. Non-specific reactions were obtained with sera from several cases of tuberculosis and cancer and in six out of 35 persons with intestinal nematodes. Further material, surgically confirmed, must be obtained before the value of this antigen can be judged. G.I.P.

(890s) In attempts to diagnose echinococcosis in man using the complement fixation reaction with the cyst fluid as antigen, Weinberg's method appeared to be less sensitive than its modification by Bensted & Atkinson [for abstract of a description of this modification see Helm. Abs., **22**, No. 113a]. Weinberg's method, however, gave fewer positive reactions with other infections. G.I.P.

(890t) The influence of intestinal parasites on health and the nervous system was studied in 250 Warsaw schoolchildren. Of 150 educationally difficult children 70% were infected with *Enterobius*, 23% with *Ascaris*, 19% with *Trichuris*, and of 100 children from a home 51%, 4% and 34% respectively. Clinically the infections were associated with bad health and various nervous symptoms, particularly in ascariasis. The work is said to describe clinical cases which clearly illustrate the retreat of these symptoms on successful worming. G.I.P.

(890u) Dobkiewicz & Rembowska-Wachowska report on the efficacy of piperazine in the therapy of helminthiasis in children and adults. Experiments were carried out on six mice, twelve guinea-pigs and six rabbits to determine: (i) the minimum toxic dose of piperazine hydrate, (ii) the effect of different concentrations of piperazine solution on live parasites and (iii) the efficacy of piperazine as an anthelmintic in children and adults. The drug was administered by gastric intubation. The alkaline reaction (*p*H 10) of the drug was harmful and was neutralized with citric acid. 265 children infected with *Enterobius* were given 0·19 gm. effervescent piperazine tablets three times a day in three stages. [The length of the periods of treatment was not clearly specified.] The infection rate decreased from 77·4% to 20·2%. 0·19 gm. per kg. body-weight per day of piperazine citrate was given to children and adults for three days against *Ascaris* and the infection rate was reduced from 7·8% to 2% in children and from 8·9% to 3·2% in adults. N.J.

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

v. ŻELIGOWSKA-SZULC, J., 1956.—" Spostrzeżenia nad obrazem klinicznym robaczyc u dzieci i wyniki leczenia na podstawie pracy poradni helmintologicznej dla dzieci w Warszawie." **2** (5), Suppl. p. 127.

w. PAWŁOWSKI, Z. & RYDZEWSKI, A., 1956.—" O wartości niektórych leków w ambulatoryjnym leczeniu inwazji pasożytami jelitowymi człowieka." **2** (5), Suppl. pp. 129–130.

x. PAWŁOWSKI, Z. & RYDZEWSKI, A., 1956.—" Jednodniowa kuracja piperazyną w masowym leczeniu glistnicy (ascariasis)." **2** (5), Suppl. pp. 131–132.

y. ULEWICZ, K. & WYSOCKA, F., 1956.—" Badania nad biocenozą flory i fauny jelitowej u dzieci w wieku przedszkolnym." **2** (5), Suppl. pp. 133–134. [English & Russian summaries p. 134.]

z. STEFAŃSKI, W., 1956.—" Rola pasożytów w przenoszeniu różycy." **2** (5), Suppl. pp. 135–136. [English & Russian summaries p. 136.]

(890v) Żeligowska-Szulc reports on 2,083 cases of helminthiasis in children ranging from nine months to 14 years of age. The greatest incidence was in children of pre-school age. 39·5% of the total number were infected with *Enterobius*, 20% with *Trichuris*, 18% with *Ascaris* and 2·5% with tapeworms. About 14% had mixed infections. Except for the age groups from 10 to 14, girls were most frequently infected with *Ascaris* and, in pre-school age groups, with *Trichuris* and *Ascaris*. Protracted helminthiasis was found to cause retardation of physical development, which was more pronounced in boys than in girls. N.J.

(890w) Pawłowski & Rydzewski list some drugs used in the treatment of human intestinal parasites. Ascariasis was treated with vermizym. 12 to 16 dragées, according to age, were given during five to six hours on two successive days. 31·8% of the patients had such side effects as weakness, diarrhoea, abdominal pain, urticaria and vomiting. 40% of the patients were cured. No cure was noted when the worm burden was above three. Piperazine hexahydrate was administered for the same purpose (6% in Aq. Menthae) 30 mg. to 75 mg. per kg. body-weight two to three times per day, after meals over three to five days. No side effects were noted; and 75% of the patients were cured. Five-day treatment had a better effect than three-day treatment. Vermizym was used in the therapy of trichuriasis without side effects but only 32% of cures were observed. Against taeniasis cestodin was administered—one tablet t.d.s. for five successive days. A laxative was given on the third and the fifth day of treatment. Toxic side effects included abdominal pain in 12·5% of the patients. 8% of the patients were cured. The product had no effect in cases of intensive infection, in which a mixture of 85% tin dust, 14% stannic oxide and 1% stannic chloride seemed to be more effective ; with this mixture 100% cures were obtained. N.J.

(890x) Pawłowski & Rydzewski report on a one-day piperazine cure in the mass treatment of ascariasis. 60 persons including 36 children below three years of age were treated with 6% piperazine hexahydrate in Aq. Menthae solution for ascariasis. The doses ranged from 61 mg. to 145 mg. per kg. body-weight in three lots over 18 hours. After the last dose a suitable quantity of caster oil was administered. Three weeks after the treatment 74% of the patients were cured. 42% of the patients had side effects consisting of general weakness (nine cases), vomiting (six), abdominal pains (five), loss of appetite (four), dizziness (three), sleeplessness (two) and prolonged diarrhoea (two). Differences in dose rate had no bearing on side effects, which were more frequent among adults than among children. N.J.

(890y) Ulewicz & Wysocka describe investigations on the intestinal flora and fauna, carried out on 254 persons, 204 of whom were children of pre-school age. Among some other, non-helminthic associations the authors list *Trichuris trichiura* and *Enterobius vermicularis*. N.J.

(890z) Stefański reports on the role of parasites as swine erysipelas carriers. White mice, pigeons and swine were used in the experiment. Larvae of *Ascaris suum* and a culture of *Erysipelothrix rhusiopathiae* were introduced together *per os* to white mice; and a culture of *E. rhusiopathiae* was introduced into nine pigeons by gastric intubation ten days after they had been infected with *Ascaridia columbae*. In neither case was there evidence that ascarid larvae can act as a vehicle in the transmission of erysipelas. Larvae of *Strongyloides* sp. were applied to the skin of white mice together with *E. rhusiopathiae*. The results confirmed the opinion that the infection route of erysipelas is cutaneous. N.J.

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ba. KĄDZIOŁKA, A., 1956.—"Patologia doświadczalnej glistnicy kurcząt wywołanej przez *Ascaridia galli* (Schrank, 1788)." **2** (5), Suppl. pp. 137–138.

bb. STEFAŃSKI, W., 1956.—"Badania nad leczeniem robaczycy płucnej owiec. II. Próby nad leczniczym działaniem niektórych leków przeciwrobaczych." **2** (5), Suppl. pp. 141–142. [English & Russian summaries p. 142.]

bc. ŻARNOWSKI, E. & DARSKI, J., 1956.—"Próby skuteczności różnych leków w zwalczaniu glistnicy u drobiu." **2** (5), Suppl. pp. 143–144. [English & Russian summaries p. 144.]

bd. KOTARBA, C., MARKIEWICZ, Z., MARKIEWICZ, K. & STANKIEWICZ, W., 1956.—"Zastosowanie piperazyny do odrobaczania psów i świń." **2** (5), Suppl. pp. 145–147. [English & Russian summaries p. 147.]

be. DARSKI, J., 1956.—"Wpływ małego dawkowania fenotiazyny na jajeczkowanie pasożytów drobiu I. (*Ascaridia galli*)." **2** (5), Suppl. pp. 149–150. [English & Russian summaries p. 150.]

bf. WERTEJUK, M. & CHOWANIEC, W., 1956.—"Dwusiarczek piperazyny jako środek przeciwglistniczy u świń." **2** (5), Suppl. pp. 151–152. [English & Russian summaries p. 152.]

(890ba) Kadziołka reports on the pathology of experimental infection with *Ascaridia galli* in chickens. 75 birds of the Sussex breed were each infected with 150 eggs of *A. galli* by intubation into the crop. Vascular changes were subsequently observed in the region of the duodenum and jejunum. Ten to 13 days after infection the mucous membrane had a haemorrhagic appearance. The increase in weight of the infected chicks was less than that of the control chicks. N.J.

(890bb) Stefański lists some anthelmintic remedies in the therapy of lung helminthiasis in sheep. From a number of therapeutic experiments the author concludes that Antimosan, sodium fluoride, phenothiazine, Fouadin (Neo-Antimosan) and emetine hydrochloride did not give satisfactory results. Lugol's solution proved to be the most effective anthelmintic. N.J.

(890bc) Żarnowski & Darski report on the efficacy of various drugs in the suppression of ascaridiasis of poultry. One-month-old chicks were infected with *Ascaridia galli* and after administration of the drugs to be tested, coprological and post-mortem examinations were carried out. Phenothiazine produced a cure rate of only 40%. Sodium fluoride was of little efficacy in a single dose and toxic to the host if the dose was repeated. Oil of chenopodium gave no positive results. Pyrethrum flowers, when given as a 2% mixture with food for six consecutive days, cured 70% to 90% of infected birds. Chemically purified petroleum benzine gave negative results and proved toxic to the host. N.J.

(890bd) Kotarba *et al.* report on the use of piperazine as a vermifuge for dogs and pigs. Polish-made (effervescent) piperazine was tried on 23 dogs and three pigs. The dose of 100 mg. to 500 mg. per kg. body-weight proved to be non-toxic to the animals and effective without purgatives. The parasites were not killed by the drug, but were paralysed, which allowed them to be evacuated in the faeces. Piperazine removed *Ascaris* and *Toxocara* but not always *Dipylidium*. It had no effect on *Ancylostoma* or *Trichuris*. N.J.

(890be) Darski describes an experiment on the effect of small doses of phenothiazine on the oviposition of *Ascaridia galli*. 1·5 gm. per kg. body-weight was taken as the normal therapeutic dose. Five series of ten one-month-old chickens were given doses ranging from 1/1,000 to 1/10 of the normal dose and the results were compared with the control birds. One-hundredth of the normal dose diminished oviposition by 51·4%, one-fiftieth diminished it by 57·13%, while one-tenth produced 96·4% diminution. The drug was administered individually in macaroni and similar foodstuffs for 15 days consecutively. N.J.

(890bf) Wertejuk & Chowaniec report on piperazine disulphide as an anthelmintic drug for pigs. It proved to be very successful against *Ascaris suum*, showing an efficacy of 90% in mass treatment and 100% in individual treatment, with doses of 125 mg. to 150 mg. per kg. body-weight. It was less effective (56% efficacy) against *Oesophagostomum dentatum* and it had no effect at all against *Strongyloides suis*. No toxic action was observed with the dosages employed. N.J.

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bg. GRZYWIŃSKI, L., 1956.—" Pasożyty wewnętrzne zwierząt futerkowych na fermach Ziem Zachodnich." **2** (5), Suppl. pp. 155–156. [English & Russian summaries p. 156.]

bh. PATYK, S., 1956.—" Zarobaczenie płuc, wątroby i przewodu pokarmowego bydła wypasanego na łąkach nawadnianych ściekami miejskimi." **2** (5), Suppl. pp. 157–158. [English & Russian summaries p. 158.]

bi. WERTEJUK, M., 1956.—" Badania nad wpływem warunków środowiskowych na larwy inwazyjne nicieni żołądkowo-jelitowych owiec." **2** (5), Suppl. pp. 159–160. [English & Russian summaries p. 160.]

bj. CZAPLIŃSKI, B. & FAGASIŃSKI, A., 1956.—" Indyk domowy (*Meleagris gallopavo*) nowym żywicielem tasiemca *Sobolevicanthus gracilis* (Zeder, 1803), Spassky et Spasskaja, 1954 (Hymenolepididae)." **2** (5), Suppl. pp. 161–162. [English & Russian summaries pp. 161–162.]

bk. TARCZYŃSKI, S. & ŚLUSARSKI, W., 1956.—" Nowe dane o rozmieszczeniu *Wehrdikmansia cervipedis* (Wehr et Dikmans, 1935) Caballero, 1945 u Cervidae w Polsce." **2** (5), Suppl. pp. 163–164. [English & Russian summaries pp. 163–164.]

bl. ŚLUSARSKI, W., 1956.—" Dalsze studia nad europejskimi przedstawicielami *Fasciola magna* (Bassi, 1875) Stiles, 1894. II. Rozmieszczenie i biologia pasożyta w Polsce." **2** (5), 165–166. [English & Russian summaries p. 166.]

(890bg) Grzywiński lists some internal parasites of foxes. Altogether 252 animals (168 silver foxes, 73 blue foxes and 11 platinum foxes) were examined. At autopsy, the alimentary tract, liver, respiratory tract and lungs, nasal cavity, frontal sinuses, urinary system and diaphragm were examined. The following parasites were found: *Echinococcus granulosus*, *Toxocara canis*, *Toxascaris leonina*, *Uncinaria stenocephala* and *Trichinella spiralis*. Tables indicate the worm burden and the number of infected animals on each of three farms. N.J.

(890bh) Patyk reports on the helminths of the lungs, the liver and the alimentary tract of cattle grazed in meadows irrigated by town sewers. 274 cows and heifers on three different farms were examined for helminths before and after grazing. Two of the farms irrigated their meadows with sewage effluent including the outflow of abattoirs, and the water was purified by sedimentation. The third farm used neither abattoir outflow nor purified town sewage. Before grazing the cattle were successfully treated for helminths. In the autumn 34·3% of previously worm-free animals were found to be infected. 33·9% showed the presence of nematodes, 2·18% were found infected with *Fasciola hepatica* and 0·73% with tapeworms. Autopsy disclosed the presence of: *Haemonchus contortus*, *Ostertagia ostertagi*, *O. lyrata*, *Nematodirus helvetianus*, *Cooperia oncophora macmasteri* and *C. punctata*, *Bunostomum phlebotomum*, *Capillaria longipes*, *Trichuris discolor* and *Moniezia* sp. N.J.

(890bi) Wertejuk reports on the influence of environmental conditions on infective larvae of gastro-intestinal nematodes in sheep. Great quantities of infective larvae were put on specially prepared lots in September, where they were left until mid-April of the following year. Larvae of *Haemonchus contortus* were found to preserve their viability and infectivity for ten months, those of *Trichostrongylus* sp. and *Oesophagostomum venulosum* for only eight months, while larvae of *Strongyloides papillosus* died during the winter. N.J.

(890bj) Czapliński & Fagasiński describe a tapeworm found in a turkey (*Meleagris gallopavo*) as identical with *Sobolevicanthus gracilis*. They base their conclusion on the number and shape of the hooks, which are of the "*skrjabinus*" type. This species is reported from galliform birds for the first time. N.J.

(890bk) Tarczyński & Slusarski report on the distribution of *Wehrdikmansia cervipedis* in Poland. The nematode was found in six stags (*Cervus elaphus* L.) in Silesia. The worm burden varied from one to eight per animal. *W. cervipedis*, common in North America, was only recently discovered in Europe; and it is claimed that it was brought there, together with *Fasciola magna*, at the end of the 19th century in imported *Cervus elaphus canadensis*. N.J.

(890bl) Slusarski reports on the distribution and hosts of *Fasciola magna*. He examined specimens of *Cervus elaphus*, *Dama dama* and *Capreolus capreolus* from the forests of Upper and Lower Silesia [Poland] where, it is claimed, the parasite was introduced with *Cervus*

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bm. TARCZYŃSKI, S., 1956.—" Badania nad morfologią i cyklem rozwojowym europejskie formy węgorka świńskiego *Strongyloides ransomi* Schwartz et Alicata, 1930." **2** (5), Suppl pp. 167–168. [English & Russian summaries pp. 167–168.]

bn. TARCZYŃSKI, S., 1956.—" Robaki pasożytnicze świń i dzików w Polsce." **2** (5), Suppl pp. 169–170. [English & Russian summaries p. 170.]

bo. PATYK, S., 1956.—" Zarobaczenie przewodu pokarmowego bydła na Ziemiach Zachodnich." **2** (5), Suppl. pp. 171–172. [English & Russian summaries p. 172.]

bp. KOZAR, Z. & WARDA, L., 1956.—" Przyczynek do epizootiologii włośnicy w okolicach Gdańska i Gdyni." **2** (5), Suppl. pp. 173–174. [English & Russian summaries p. 174.]

bq. DRÓŻDŻ, J. & MALCZEWSKI, A., 1956.—" Występowanie, ekologia i rozprzestrzenianie się błotniarki moczarowej (*Galba truncatula* O. F. Müll.) w terenie." **2** (5), Suppl. pp. 175–176

br. CHOWANIEC, W., 1956.—" Badania nad biologią i ekologią błotniarki moczarowej oraz form larwalnych motylicy wątrobowej." **2** (5), Suppl. pp. 177–178. [English & Russian summaries p. 178.]

elaphus from America. The worm was found to parasitize extensively *C. elaphus* and no the other species mentioned above. It was also found in cattle grazing in the proximity o the infested forests. Double infections with *Fasciola hepatica* occurred, both worms retaining their anatomo-pathological characters. N.J

(890bm) [A fuller account of this article appeared in *Acta parasit. polon.*, 1956, **4**, 627–661. For abstract see Helm. Abs., **25**, No. 330h.]

(890bn) [A fuller account of this article appeared in *Acta parasit. polon.*, 1956, **4**, 663–779. For abstract see Helm. Abs., **25**, No. 330i.]

(890bo) Patyk reports on intestinal helminth infections in cattle in Polish Western Territories. At post-mortem examinations of 74 alimentary tracts and 300 oesophagi the following species were found: *Cooperia oncophora* (48·6%), *Ostertagia ostertagi* (41·8%) *Oesophagostomum radiatum* (39·1%), *Haemonchus contortus* (36·4%), *Nematodirus helvetianus* and *Cooperia macmasteri* (32·5%). 4% to 8% of animals were infected with *Nematodirus filicollis*, *Trichuris ovis*, *Chabertia ovina*, *Oesophagostomum venulosum* and *Bunostomum phlebotomum*. The incidence is not given for *Cooperia punctata*, *Trichuris discolor*, *Ostertagia lyrata*, *Capillaria longipes*, *Strongyloides* sp., *Moniezia benedeni* and *Paramphistomum cervi*. Altogether 77% of examined animals were infected with one or more species of helminths. N.J

(890bp) Kozar & Warda report on the epizootiology of trichinelliasis in the neighbourhood of Gdańsk and Gdynia. Among 204 specimens of *Rattus norvegicus* two were infected with *Trichinella spiralis*. No infection was found in 23 *R. rattus* and 26 *R. r. alexandrinus*. Only one out of 335 breeding foxes and one out of 37 domestic dogs were infected. Examination of seven cats, ten wild foxes, one marten and two mink gave negative results. The authors conclude that, contrary to official statistics concerning the infection of swine, trichinelliasis occurs seldom in these regions. N.J

(890bq) Dróżdż & Malczewski discuss the occurrence, ecology and geographical distribution of *Galba truncatula*. It occurred particularly in small temporary or permanent collections of water with various kinds of bottom, in most cases bearing poor vegetation. It was seldom found in marshy places. Foci ranged in size from several square centimetres to several square metres and contained from a few to 68 specimens per five square centimeters. The authors attribute the principal role in the distribution of *G. truncatula* to water and a secondary one to man and animals. N.J

(890br) Chowaniec discusses the biology and ecology of *Galba truncatula*. The earliest date when *G. truncatula* appeared was found to be in April and the latest in November, when it was free from infection. Maximum incidence of infection of the snails was in July and September but total incidence was small. Acid foci were shunned by the snails. N.J

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

bs. ZIELIŃSKI, Z., 1956.—"Badania nad enzootią *Cystocaulus ocreatus* w Polsce." **2** (5), Suppl. pp. 179–180. [English & Russian summaries p. 180.]

bt. ŚWIETLIKOWSKI, M., 1956.—"Uwagi o epizootiologii robaczycy płucnej bydła na Żuławach." **2** (5), Suppl. pp. 181–183. [English & Russian summaries pp. 182–183.]

bu. FAGASIŃSKI, A. & MACHNICKA, B., 1956.—"Benzyna jako środek przeciwrobaczy u lisów." **2** (5), Suppl. pp. 185–186. [English & Russian summaries pp. 185–186.]

bv. CZAPLIŃSKI, B., MALCZEWSKI, A. & SWIETLIKOWSKI, M., 1956.—"Wpływ subklinicznej inwazji *Amidostomum anseris* (Zeder, 1800) na wzrost i tucz gęsi." **2** (5), Suppl. pp. 187–188. [English & Russian summaries p. 188.]

bw. CZAPLIŃSKI, B. & PRZYJAŁKOWSKI, Z., 1956.—"Stan zarobaczenia pospolitymi nicieniami jelitowymi u kur padłych na gruźlicę, pomór rzekomy, cholerę, tyfus, nieżyt zakaźny nosa i schorzenia niezakaźne oraz u kur zdrowych." **2** (5), Suppl. pp. 189–190. [English & Russian summaries p. 190.]

bx. RYBICKA, K., 1956.—"Tasiemce ptaków (exclusive anseriformes) jeziora Drużno." **2** (5), Suppl. pp. 195–198. [English & Russian summaries pp. 197–198.]

by. SULGOSTOWSKA, T., 1956.—"Przywry ptaków jeziora Gołdapiwo." **2** (5), Suppl. pp. 199–201. [English & Russian summaries p. 201.]

(890bs) Zieliński reports that *Cystocaulus ocreatus* in Poland was found in "cakle" sheep from the mountainous regions and in four sheep imported from Holland. Two different larval types of *C. ocreatus* are said to occur. N.J.

(890bt) Swietlikowski reports on the epizootiology of lung helminthiasis due to *Dictyocaulus viviparus* in cattle in the district of Żutawy. Cattle carried the infection throughout the year. Infective larvae were found on pastures, in watering-places and in cow-sheds. Overwintering under local conditions was possible. First-stage larvae were highly susceptible to desiccation. N.J.

(890bu) Fagasiński & Machnicka describe the anthelmintic effect of chemically purified benzine, (boiling point 29·6°C. to 84·8°C.) in the treatment of fox cubs infected with ascarids. The product was given by gastric intubation, preceded by flax-seed decoction and followed by castor oil. Living specimens of *Toxocara canis* were eliminated in the faeces. No toxic side effects were noted. N.J.

(890bv) Czapliński *et al.* report on the influence of subclinical *Amidostomum anseris* infection on the growth and fattening of geese. The authors conclude that the absolute weight and the increase in weight both depend on the worm burden. Rate of increase in weight was found to diminish steadily with rising worm burden. Birds carrying over 1,000 worms showed an absolute decrease in weight of 11·6% as compared with control birds. N.J.

(890bw) Czapliński & Przyjałkowski discuss the correlation of intestinal nematode infections and some infectious diseases in chickens. Observations were made on 196 birds. *Ascaridia galli* was found in 60% of birds with Newcastle disease and tuberculosis, in 50% with typhus and cholera, in 46% of birds with non-infectious diseases, in 25% with infectious nasal catarrh and in 32% of healthy birds. *Capillaria* sp. was present in 60% of birds with Newcastle disease, while the incidence of infection in the other groups ranged from 0% to 20%. *Heterakis gallinae* was found in 75% to 96% of chickens of all the groups examined. N.J.

(890bx) [A fuller account of this article appears in *Acta parasit. polon.*, 1958, **6** (1/7), 143–178.]

(890by) Sulgostowska lists the trematodes found in 75% of 283 birds (mostly Anatidae) examined at Gołdapiwo lake. A total of 45 parasite species was found, mainly belonging to the families Strigeidae and Echinostomidae. Cyclocoelidae, Prosthogonimidae and Notocotylidae were also represented. Typical species in *Podiceps cristatus* were: *Monilifer spinulosus*, *Echinochasmus coaxatus* and *Tylodelphys conifera*, while *Fulica atra* harboured *Catatropis pacifera*, *Cyclocoelum microstomum* and *Prosthogonimus ovatus*. *Apharyngostrigea cornu* and *Posthodiplostomum cuticola* were characteristically found in herons, and *Diplostomum spathaceum* in sea-gulls. N.J.

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

bz. JARECKA, L., 1956.—" Larwy tasiemców w jeziorze Gołdapiwo." **2** (5), Suppl. pp. 203–204. [English & Russian summaries p. 204.]

ca. SZYMANIK-KOPERSKA, K., 1956.—" Tasiemce ptaków kaczkowatych jeziora Gołdapiwo." **2** (5), Suppl. pp. 205–206. [English & Russian summaries p. 206.]

cb. KOZICKA, J., 1956.—" Pasożyty ryb jeziora Gołdapiwo." **2** (5), Suppl. pp. 207–208. [English & Russian summaries p. 208.]

cc. BAŻAŃSKA, K., 1956.—" Tasiemce ptaków niekaczkowatych jeziora Gołdapiwo." **2** (5), Suppl. pp. 209–210.

(890bz) Jarecka reports on the tapeworm larvae at Gołdapiwo lake. In 38,705 specimens of Copepoda and Ostracoda were found 236 larvae belonging to 13 tapeworm species, one metacercaria of *Bunodera luciopercae* and a larval acanthocephalan—*Neoechinorhynchus rutili*. *Eudiaptomus graciloides* and *Cyclops scutifer* were found to be the exclusive hosts of the larval tapeworms in the pelagic zone, and were also the best represented species. In the littoral zone *Macrocyclops albidus* harboured procercoids of *Bothriocephalus claviceps*, cysticercoids of *Diploposthe laevis*, *Hymenolepis paracompressa*, *H. spiralibursata* and *Fimbriaria* sp. In *Cyclops insignis* were found larvae of *Proteocephalus macrocephalus*, while *Diorchis ransomi*, *D. nyrocae*, *Dicranotaenia coronula*, and the acanthocephalan larva (*Neoechinorhynchus rutili*) were found in *Cyclocypris laevis*. *Cypridopsis vidua* showed the presence of *Hymenolepis gracilis* and *Diorchis ransomi*. Larvae of *Hymenolepis macrocephala* and *Diorchis stefanskii* occurred in *Notodromas monacha*, and larvae of *Anomotaenia ciliata* in *Simocephalus expinosus*. N.J

(890ca) Szymanik-Koperska reports on the tapeworms of Anatidae of Gołdapiwo lake. 69 out of 72 birds examined were infected with 21 species of tapeworms, 20 belonging to the Hymenolepididae and one to the Dilepididae. The commonest host was *Anas platyrhynchos*. *Hymenolepis spiralibursata*, *H. paracompressa*, *Fimbriaria fasciolaris*, *Aploparaksis furcigera*, *Dicranotaenia coronula*, *Diorchis nyrocae*, *Hymenolepis macrocephala*, *Anomotaenia ciliata and Hymenolepis gracilis* were found to be typical of the biocoenosis. Species occurring less frequently were: *Hymenolepis paramicrosoma*, *Diorchis stefanskii* and *Hymenolepis parvula*. Those that occurred seldom were: *Hymenolepis compressa*, *H. abortiva*, *Diorchis parvogenitalis*, *Hymenolepis* sp., *Diploposthe laevis*, *Hymenolepis arcuata* and *H. megalops*. The author divides the worms into two groups according to their reactions to increasing helminth populations—growth only is arrested in one group while both growth and sexual development are arrested in the other group. N.J.

(890cb) Kozicka lists the parasites found in 17 species of fish in Gołdapiwo lake. Altogether 67 species were found; 17 were represented by metacercariae, eight of which were characteristic of the lake, namely, *Apophallus* sp., *Cercaria helvetica XVII*, *Diplostomulum spathaceum*, *Tylodelphys conifera*, *Neodiplostomulum* sp., *Posthodiplostomulum scardinii*, *P. cuticola* and *Tetracotyle* sp. Out of 11 species of mature flukes *Bunodera luciopercae* and *Asymphylodora tincae* were found to be typical of the biocoenosis, as were three out of eight adult cestode species, viz., *Triaenophorus nodulosus*, *Proteocephalus exiguus* and *P. percae*. Larval stages showed little host specificity while, on the other hand, mature digenetic trematodes and adult cestodes were highly host specific. N.J.

(890cc) Bażańska writes on the tapeworms of non-anseriform birds of Gołdapiwo lake, 21 species of which were found in 202 avian specimens, representing 21 species. The commonest cestodes of the lake were: *Ligula intestinalis*, *Diorchis ransomi*, *D. inflata*, *Aploparaksis filum*, *A. crassirostris* and two unidentified species of *Hymenolepis*. Two new species of *Hymenolepis* are said to have been found in *Podiceps cristatus*. [It is not clear whether these are the two common species referred to above. No figures or descriptions are given.] N.J.

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

cd. GRABDA, B., 1956.—" Pasożyty żab jeziora Gołdapiwo." **2** (5), Suppl. pp. 211–212. [English & Russian summaries p. 212.]

ce. WIŚNIEWSKI, W. L., 1956.—" Badania nad parazytofauną jeziora Gołdapiwo." **2** (5), Suppl. pp. 213–215. [English & Russian summaries p. 215.]

cf. GUTTOWA, A., 1956.—" Próba eksperymentalnego ustalenia głównego pierwszego żywiciela pośredniego bruzdogłowca szerokiego *Diphyllobothrium latum* (L.) dla terenu Polski." **2** (5), Suppl. pp. 217–218. [English & Russian summaries p. 218.]

cg. KISIELEWSKA, K., 1956.—" O stosunkach wewnątrzpopulacyjnych u larw *Drepanidotaenia lanceolata* (Bloch) w niektórych żywicielach pośrednich." **2** (5), Suppl. pp. 219–221. [English & Russian summaries pp. 220–221.]

ch. KISIELEWSKA, K., 1956.—" O zjawiskach obumierania larw *Drepanidotaenia lanceolata* (Bloch) w niektórych żywicielach pośrednich." **2** (5), Suppl. pp. 221–222. [English & Russian summaries p. 222.]

ci. POJMAŃSKA, T., 1956.—" Pasożyty wewnętrzne (Cestoda, Trematoda) drobnych ssaków polnych (Insectivora, Rodentia) z okolic Turwi koło Poznania." **2** (5), Suppl. pp. 223–224. [English & Russian summaries p. 224.]

cj. POJMAŃSKA, T., 1956.—" Wpływ zagęszczenia hodowli na rozwój jaj *Triaenophorus lucii* (Müll.) (Cestoda)." **2** (5), Suppl. 225–226. [English & Russian summaries p. 226.]

ck. MICHAJŁOW, W., 1956.—" W sprawie metodyki badania rozwoju Pseudophyllidea w pierwszych żywicielach pośrednich." **2** (5), Suppl. pp. 227–228. [English & Russian summaries p. 228.]

(890cd) Grabda found 15 species of mature flukes, three species of metacercariae, one species of mesocercaria, one species of acanthocephalan and a number of undetermined nematodes in frogs of Gołdapiwo lake. 84·1% of *Rana esculenta* examined were infected with trematodes, 36% with nematodes and 6% with acanthocephalans. In *R. temporaria* the incidence of infection was: trematodes 52·3%, nematodes 98%, acanthocephalans 3·8%; and in *R. terrestris* the corresponding figures were: trematodes 41·4%, nematodes 96·5% and acanthocephalans 3·4%. Characteristic parasites of frogs in the lake were: *Pleurogenoides medians*, *Opisthioglyphe ranae* and *Codonocephalus urnigerus* from *R. esculenta*; *Prosotocus confusus* and *Brandesia turgida* from *R. terrestris*; and *Haplometra cylindracea*, *Pleurogenes claviger* and *Diplodiscus subclavatus* in *R. temporaria*. In cases of heavy nematode infection, few or no trematodes occurred. N.J.

(890ce) Wiśniewski discusses the parasitic fauna of Gołdapiwo lake, which is classed as mesotrophic. In birds, amphibians and fish (as final hosts) were found 54 species of tapeworms, 94 species of trematodes and five acanthocephalan species; while in Mollusca, Oligochaeta, Hirudinea, Insecta, Isopoda, Copepoda, Ostracoda and Phyllopoda (as intermediate hosts) were found 16 tapeworm species, 89 trematode species and two acanthocephalan species. [The species found are not listed.] It is concluded that there is a greater range of species of parasites in a mesotrophic lake than in a eutrophic one, although populations of particular parasitic species tend to be larger in the latter. N.J.

(890cf) [A fuller account of this article appeared in *Acta parasit. polon.*, 1956, **4** (20/23), 781–802. For abstract see Helm. Abs., **25**, No. 330j.]

(890cg) [A fuller account of this article appears in *Acta parasit. polon.*, 1957, **5** (1/12), 63–90. For abstract see Helm. Abs., **26**, No. 324d.]

(890ch) [A fuller account of this article appears in *Acta parasit. polon.*, 1957, **5** (1/12), 193–210. For abstract see Helm. Abs., **26**, No. 324i.]

(890ci) [A fuller account of this article appears in *Acta parasit. polon.*, 1957, **5** (1/12), 117–161. For abstract see Helm. Abs., **26**, No. 324f.]

(890cj) [A fuller account of this article appears in *Acta parasit. polon.*, 1957, **5** (13/21), 397–406.]

(890ck) Michajłow gives a brief outline of a paper which discusses the methods of research on the development of Pseudophyllidea in the first intermediate host. [No details of the work are given.] N.J.

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

cl. KARLEWICZOWA, R., 1956.—"Materiały do helmintofauny przewodu pokarmowego susła perełkowanego (*Citellus suslica* Gueldenstaedt)." **2** (5), Suppl. pp. 231–232.

cm. ZIELIŃSKI, Z., 1956.—"Projekt legendy mapy parazytologicznej." **2** (5), Suppl. pp. 233–234. [English & Russian summaries p. 234.]

cn. SOŁTYS, A., 1956.—"Helmintofauna nietoperzy (Chiroptera) z okolic Lublina." **2** (5), Suppl. p. 235. [English & Russian summaries p. 235.]

co. FURMAGA, S., 1956.—"Helmintofauna gryzoni polnych (szkodników pól) oraz ich tępicieli (ptaków drapieżnych)." **2** (5), Suppl. pp. 237–238.

cp. ŻARNOWSKI, E., 1956.—"Helmintofauna drobnych ssaków leśnych (Insectivora i Rodentia) okolicy Puław. Część II. Trematoda." **2** (5), Suppl. p. 239.

(890cl) Karlewiczowa lists the parasites of the alimentary tract of *Citellus suslica*. 89 specimens, 23 of which were raised in captivity, were examined. 14·6% of the animals were found to be infected with *Ctenotaenia citelli*, 22% with *Hymenolepis* sp. and 2·2% with *Cysticercus* sp. *Trichostrongylus* (*T. axei* and *T. retortaeformis*) was harboured by 12·3% of the animals and *Trichuris* sp. occurred in 1·1%. Cestodes (*Ctenotaenia citelli*) occurred more commonly in female hosts, while male hosts were more commonly infected with nematodes. Tapeworms were not found in hibernating animals, though numerous nematode infections occurred therein. N.J.

(890cm) To facilitate the graphical representation of research results Zieliński describes a new system for the symbolic representation of parasitological information on maps. The system is said to comprise about 3,500 symbols the shape of which conveys taxonomic data while the colour indicates host identity. [No list of the symbols is given, nor are they illustrated.] N.J.

(890cn) Sołtys gives a brief account of his research on the helminth fauna of bats of the Lublin district. 145 of 156 bats, belonging to eight species carried trematode infections, 14 presented cestode infections, 40 specimens harboured nematodes and one animal was found to be infected with an acanthocephalan species. [The parasites are not listed.] N.J.

(890co) Furmaga reports on the helminth fauna of field rodents and their avian predators. The incidence of infection observed in the 618 predatory birds examined reached a maximum of 49·6% in June. Trematodes were found in 13% of the birds, cestodes in 6·6%, acanthocephalans in 5·3% and nematodes in 38·3%. A total of 30 parasite species was recorded, namely, 15 trematode species, 14 nematode species and one acanthocephalan species. The incidence of infection of individual hosts ranged from 14% to 74%. Of the 687 rodents, belonging to eight species, which were examined 41% were infected with helminths. Trematodes (two species), occurred in 0·58%, cestodes (five species) in 3% and nematodes (nine species) in 39% of the animals. Larval cestodes were found in 4·7% of the specimens examined. The incidence of infection in rodents reached a maximum in April and ranged in different species from 25% to 58%. [No lists of hosts or parasites are given.] N.J.

(890cp) Żarnowski gives a brief preliminary report on an investigation of the trematodes of small forest mammals (rodents and insectivores) in the neighbourhood of Puławy. Of the following rodents examined: 80 specimens of *Clethrionomys glareolus*, one *Microtus agrestis*, three *M. ratticeps*, 77 *M. arvalis*, 18 *M. subterraneus*, 18 *Apodemus agrarius*, one *A. flavicollis*, 24 *A. sylvaticus*, eight *Micromys minutus* and two *Mus musculus* only one specimen (of *A. agrarius*) harboured a trematode infection (*Plagiorchis* sp.). The trematodes found in the insectivores examined were: *Plagiorchis exasperatus*, *Brachylaemus* sp., *Metorchis albidus*, *Dicrocoelium soricis* and one undetermined species. The incidence of infection was for *Sorex araneus* 8·2%, *S. minutus* 9·8%, *Neomys fodiens* 27·2% and *Crocidura leucodon* 8%. N.J.

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

cq. CZAPLIŃSKI, B., 1956.—" Krytyczne opracowanie listy gatunków Hymenolepididae występujących u anseriformes." **2** (5), Suppl. pp. 241–242. [English & Russian summaries p. 242.]

cr. ŚLUSARSKI, W., 1956.—" Przypadek inwazji *Aphanurus stossichi* (Monticelli, 1891) Looss, 1907 u łososia *Salmo salar* L. w Bałtyku (Trematoda, Hemiuridae)." **2** (5), Suppl. pp. 243–244. [English & Russian summaries pp. 243–244.]

cs. STYCZYŃSKA, E., 1956.—" Acanthocephala w biocenozie jeziora Drużno." **2** (5), Suppl. pp. 245–246. [English & Russian summaries p. 246.]

ct. STYCZYŃSKA, E., 1956.—" Kilka obserwacji nad biologią i rozwojem larw *Filicollis anatis* Schrank (Acanthocephala)." **2** (5), Suppl. pp. 247–248. [English & Russian summaries pp. 247–248.

cu. PROST, M., 1956.—" Monogenoidea skrzeli ryb wisły." **2** (5), Suppl. pp. 259–260. [English & Russian summaries p. 260.]

cv. STYCZYŃSKA, E., 1956.—" Wpływ wysychania *Galba truncatula* O. F. Müll. na rozwój i przeżywalność stadiów rozwojowych *Fasciola hepatica* L." **2** (5), Suppl. pp. 261–262. [English & Russian summaries p. 262.]

cw. BEZUBIK, B., 1956.—" Badania nad *Polymorphus minutus* (Goeze, 1782) i *Polymorphus magnus* (Skrjabin, 1913)." **2** (5), Suppl. p. 265. [English & Russian summaries p. 265.]

cx. BEZUBIK, B., 1956.—" Helmintofauna dzikich kaczek (podrodzina Anatinae) woj. Lubelskiego i Białostockiego." **2** (5), Suppl. pp. 267–268. [English & Russian summaries p. 268.]

(890cq) Czapliński comments on the status of 176 hymenolepidid species occurring in 85 species of anseriform birds. He proposes to accept the diagnosis of *Hymenolepis* Weinland, 1858 *sensu lato* for the majority of the tapeworms with three testes (parasites of birds) and to exclude from this genus *Dicranotaenia*, *Drepanidotaenia*, *Echinocotyle*, *Orlovilepis*, *Sobolevicanthus* and *Sphenacanthus*. N.J.

(890cr) Slusarski reports on the occurrence of a trematode, related to *Aphanurus stossichi*, in salmonid fish in the Baltic Sea area of the Hel peninsula. The specimens found differed from *A. stossichi* in the possession of a muscular dilatation of the excretory vesicle, regarded as a tail appendage (ecsoma). Such an appendage has, however, been reported in the genus *Aphanurus*; and this was regarded as justifying the temporary classification of these specimens, as *A. stossichi*. [A fuller account of this appears in *Acta parasit. polon.*, 1957, **5** (1/12), 51–62. For abstract see Helm. Abs., **26**, No. 324c.] N.J.

(890cs) [A fuller account of this article appears in *Acta parasit. polon.*, 1958, **6** (1/7), 195–221.]

(890ct) [A fuller account of this article appears in *Acta parasit. polon.*, 1958, **6** (1/7), 213–224.]

(890cu) [A fuller account of this article appears in *Acta parasit. polon.*, 1957, **5** (13/21), 299–395.]

(890cv) Styczyńska reports on the influence of desiccation of *Galba truncatula* on the development and survival of larval *Fasciola hepatica*. No difference in the early development of the parasite in the desiccated snails and the control snails was noted; but in the experimental snails development ceased after the first redial stage had been reached although it continued normally in the control group. Desiccation at the cercarial stage slowed down further development. The longevity of desiccated infected snails was less than that of desiccated control snails. N.J.

(890cw) Bezubik briefly discusses the identity of *Polymorphus magnus* and *P. minutus*, concluding that there are only dimensional differences. [No details are given.] N.J.

(890cx) [A fuller account of this article appeared in *Acta parasit. polon.*, 1956, **4** (9/19), 407–510. For abstract see Helm. Abs., **25**, No. 330b.]

890—Wiadomości Parazytologiczne. Warsaw. (cont.)

cy. CZAPLIŃSKI, B., 1956.—"Hymenolepididae Fuhrmann, 1907 (Cestoda) u niektórych anseriformes domowych i dzikich w Polsce." **2** (5), Suppl. pp. 269–270. [English & Russian summaries pp. 269–270.]

cz. KOZICKA, J., 1956.—"Badania nad ważniejszymi chorobami pasożytniczymi ryb na przykładzie 37 jezior zespołu Węgorzewo." **2** (5), Suppl. pp. 271–272. [English & Russian summaries pp. 271–272.]

(890cy) [A fuller account of this article appeared in *Acta parasit. polon.*, 1956, **4** (8), 175–373. For abstract see Helm. Abs., **25**, No. 330a.]

(890cz) Kozicka gives a brief account of the investigation of parasitic diseases of fish in 37 lakes of the Wegorzewo Fisheries. From 17,200 young and adult specimens of *Coregonus albula*, *C. lavaretus*, *Scardinius erythrophthalmus*, *Abramis brama*, *Blicca björkna*, *Leucaspius delineatus*, *Tinca tinca*, *Carassius carassius*, *Gobio gobio*, *Rhodeus serviceus*, *Esox lucius* and *Perca fluviatilis* were reported infections with *Ligula intestinalis*, *Triaenophorus nodulosus* and *Posthodiplostomum cuticola*. N.J.

891—Wissenschaftliche Zeitschrift der Friedrich-Schiller-Universität Jena.

a. ODENING, K., 1956.—"Die Zooparasiten der Frösche Deutschlands. Bestimmungstabelle der in Deutschland vorkommenden tierischen Schmarotzer von *Rana esculenta* L. und *Rana temporaria* L. unter Berücksichtigung von aus anderen europäischen Amphibien bekanntgewordenen Formen." Mathematisch-Naturwissenschaftliche Reihe, **5** (3/4), 179–215.

(891a) Odening gives a list of helminths parasitic in *Rana esculenta* and *R. temporaria*, with notes on their taxonomic characters supplemented by illustrations. The helminth parasites of other European amphibians are briefly considered. N.J.

892—Wissenschaftliche Zeitschrift der Martin-Luther-Universität Halle-Wittenberg.

a. DIETER, A., 1956.—"Vergleichende experimentelle Untersuchungen an zoophagen und phytophagen Nematoden." Mathematisch-Naturwissenschaftliche Reihe, **5** (2), 157–185.

b. KÄMPFE, L., 1956.—"Zur Verwendbarkeit von Chrysoidin als Vitalkriterium für Larven des Rüben- und Kartoffelnematoden." Mathematisch-Naturwissenschaftliche Reihe, **5** (3), 465–478.

(892a) Using extracts of *Ascaris lumbricoides*, *Trichuris ovis* and tissue extracts of their hosts, and extracts of *Heterodera schachtii*, *H. rostochiensis* and of their hosts, Dieter investigated the symptoms produced by phytoparasitic and zooparasitic nematodes and suggested that the nematode saliva contains an undefined substance which alters the permeability of the cell membrane and affects the charge on the cell limiting layer. Enzymes in the saliva then enter the cell and it is assumed that these delay mitosis and chromosome division so that multinucleate giant cells are formed. Extracts from nematode-infested plants produced symptoms in leaves, but those from healthy plants did not. Reducing agents increased the effect and oxidizing substances delayed the appearance of symptoms. Extract of crushed *Heterodera* cyst had no effect on leaves, but extract of hatched *Heterodera* larvae had an effect; the latter extract was inactivated by heat, but the plant extracts were not, nor were extracts of zooparasitic nematodes. Extracts of both zooparasitic and phytoparasitic nematodes stimulated the growth of cress roots; cyst extract had no effect on cress roots, but extract of hatched larvae had a marked effect, showing that an active substance appears when the larvae begin to develop. Oxidizing agents inactivated the substance, but reducing compounds had no effect; the substance was destroyed by heating. High concentration of extract stimulated root growth, medium concentration hindered it, but low concentrations again stimulated. Nematode extract lysed an acid solution of gelatin in aqueous carbolic acid. Extract of zooparasitic nematodes haemolysed blood better than did that of phytoparasites. Cyst extract did not haemolyse. The addition of healthy plant tissue reduced the haemolytic property of phytoparasitic nematode extract, but the addition of extract from infected plants had no effect. The haemolysin in plant nematode extract is destroyed by heat, but it is not destroyed by heat in the case of the extract of animal

parasitic nematodes. Drying the extracts for one week did not affect their haemolytic property. The causal substance of the symptoms of nematode attack on plants is activated by salts of heavy metals, hydrocyanic acid, sulphuretted hydrogen and ascorbic acid, but its action is hindered by oxidizing agents such as potassium permanganate. J.J.H.

(892b) Kämpfe, in experiments on the beet and potato-root eelworm, has investigated the use of the dye chrysoidin as a criterion of viability with the following preliminary results. The mobility of larvae in chrysoidin solutions falls more rapidly than that of larvae in control solutions. The fall is least pronounced at optimum temperatures. The number of dead worms increases with rising concentrations of chrysoidin. These two effects are most noticeable during the early days of the test. The greatest number of larvae hatches within the first three days in chrysoidin solution. At 20°C. the number of larvae hatching equalled that in the untreated solution. No photodynamic effect was observed. The toxicity of chrysoidin solution falls as it ages. Very dilute solutions (1 : 100,000 and 1 : 1,000,000) appear to stimulate hatching more than tap water. The stained (therefore living) larvae retain full powers of root penetration. For nematicidal and physiolgical tests concentrations from 1 : 40,000 to 1 : 50,000 are optimal. A concentration of 1 : 10,000 is distinctly toxic. The optimum temperature range is 20°C. to 25°C. G.I.P.

893—Wissenschaftliche Zeitschrift der Universität Rostock.

a. DIEZ, G., 1956.—" Die Verbreitung des *Distomum hepaticum* L. beim Rind im Bezirk Rostock." Mathematisch-Naturwissenschaftliche Reihe, **5** (3), 327–344.

(893a) Diez reports on the distribution of *Fasciola hepatica* from cattle in the Rostock district. Geology, topography and climatology of the district are discussed. The incidence of infection was proportionate to the mean annual precipitation, when the latter showed extreme variation. It decreased from 1930 to 1937 and increased from 1947 to 1953 as did the mean of the annual precipitation. It is stressed that this could be true only for an individual region. Several possible intermediate hosts—*Planorbis* spp., *Lymnaea stagnalis*, *L. palustris* and *Radix ovata*—were found in a drain. *R. ovata* was the most abundant and was the only species to be infected with either rediae or cercariae of *F. hepatica*. In that particular focus 40·5% of specimens of this snail were infected, while the total infection rate in that area was 18·4%. Snail infection was highest in July, August and September, when cercariae left their intermediate host. The author recommends control by the application of molluscicides such as slaked lime and copper sulphate. N.J.

894—World Medical Journal.

a. HOEKENGA, M. T., 1956.—" Experiments in the therapy of human ascariasis, with particular reference to the piperazine salts." **3** (5), 279–283. [Also in Spanish pp. 263–265; in French pp. 299–301.]

895—Za Socialistické Zemědělství. Prague.

a. ŠEDIVÝ, J. & BLABOLA, J., 1956.—" Hádátka na ovsech v kraji Jihlava." **6** (18), 1111–1113.

(895a) Sedivý & Dlabola briefly describe infection of oats with *Aphelenchoides parietinus* in the Jihlava region. The infection was most intense in fields situated in valleys and in the neighbourhood of forests. N.J.

896—Zbirnik Prats Zoologichnogo Muzeyu. Vseukrainska Akademiya Nauk.

*a. POGREBNYAK, L. P., 1956.—[Investigation of swine helminth fauna in Pravoberezh U.R.S.R.] **27**, 52–60. [In Ukrainian: Russian summary.]

897—Zeitschrift für Aerosol-Forschung und -Therapie.

a. ENIGK, K., 1956.—" Die Aerosoltherapie des Lungenwurmbefalles der Wiederkäuer." **5** (2), 110–114. [Discussion pp. 114–115.]

898—Zeitschrift für Morphologie und Ökologie der Tiere.

a. OSCHE, G., 1956.—" Untersuchungen über die Morphologie vor allem des 'Lippenapparates' von *Paraspidodera uncinata* (Nematoda) aus dem Meerschweinchen. Ein Beitrag zur Phylogenese zusammengesetzter Komplexorgane (Synorganisation)." **45**, 250–274.

(898a) *Paraspidodera uncinata*, hitherto known from South American rodents of the genera *Agouti*, *Kerodon*, *Cavia* and *Ctenomys*, has now been shown to be a frequent parasite of guinea-pigs in the laboratory of the Zoological Institute at Erlangen; it occurs in large numbers in the caecum and, more rarely, in the rectum. Osche has made a detailed examination of the lips of *Paraspidodera* and shows that the structure and arrangement of the papillae is of the Ascaridoidea type. The lips are provided with peculiar cuticular processes and all three lips are formed differently. Details of the development are given and the factors influencing it are discussed. G.O.

899—Zeitschrift für Urologie.

a. ROTHAUGE, C. F., 1956.—" Zur Diagnostik der Blasenbilharziose." **49** (1), 48–52.
b. ANDROULAKÁKIS, A., 1956.—" Über Askaridenabgang aus den Harnwegen." **49** (2), 116–118.

900—Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii. Moscow.

a. GORITSKAYA, V. V., UDOVITSKAYA, E. F., SIMONENKO, E. N. & CHERNOMORDIK, A. B., 1956.—[Data on intestinal parasitic fauna in children of nursery age. Preliminary report.] **27** (12), 58–61. [In Russian.]

(900a) An examination for various intestinal parasites of 61 children aged one to four years in Dnepropetrovsk showed 48 to be infected with *Hymenolepis nana*, three with *Ascaris lumbricoides* and four with *Trichuris trichiura*. About half of the children suffered with chronic dysentery and in these the parasitic infection rates were higher. The authors report in more detail on the occurrence of dysenteric bacilli and of parasites in relation to the symptoms observed. G.I.P.

901—Zoologica. Original-Abhandlungen aus dem Gesamtgebiet der Zoologie.

a. BASIR, M. A., 1956.—" Oxyuroid parasites of Arthropoda. A monographic study. 1. Thelastomatidae. 2. Oxyuridae." **38**, Pt. 2, No. 106, 79 pp.

(901a) Basir has revised all the genera and species of the Thelastomatidae, giving redescriptions and, where possible, figures. He proposes the erection of three new genera, namely, *Schwenkiella* n.g. for *Thelastoma robustum* (Leidy, 1850) and *T. icemi* (Schwenk, 1926), *Johnstonia* n.g. for *T. alatum* (Johnston, 1914), *Oxyuris myriapodicola* Skryabin, 1916 and *T. crimense* Skryabin, 1923, and *Linstowiella* n.g. for *Oxyuris lanceolata* von Linstow, 1883. *Schwenkiella* is differentiated from *Thelastoma* by the position of the excretory pore, which is posterior to the base of the oesophagus, and the length of the female tail, which is one-third or less that of the body. *Johnstonia* has the female tail long and filiform and the female buccal cavity is extremely small and short and the cervical region is not provided with spines. *Linstowiella* has the vulva in front of the base of the oesophagus and a long filiform female tail. *Fontonema* Chitwood, 1930, *Mirzaiella* Basir, 1942 and *Chitwoodiella* Basir, 1948 are transferred from the Thelastomatidae to the Oxyuridae. *Galebiella* Basir, 1941 and *Zonothrix* Todd, 1942 are considered synonyms of *Pseudonymous* Diesing, 1857, and *Periplaneticola* Basir, 1940, *Gryllocola* Basir, 1942 and *Talpicola*, Basir, 1942 of *Binema* Travassos, 1925. While agreeing with Chitwood that the Thelastomatidae is a distinct and natural group of the Oxyuroidea, Basir does not consider that there is any justification for dividing this family into subfamilies. In the section on the Oxyuridae the author points out that the possession

of four instead of eight cephalic papillae is the only morphological character separating this family from the Thelastomatidae. One new genus is proposed, *Desmicola* n.g. for a nematode described by Skryabin from a millipede (*Polydesmus* sp.) with *D. leidyi* as type. S.W.

902—Zoological Magazine. Tokyo.

a. SAWADA, I., 1956.—[Studies on the growth of the chicken tapeworm, *Raillietina* (*Paroniella*) *kashiwarensis*, in its host.] **65** (10), 362–369. [In Japanese: English summary p. 369.]

(902a) The growth of *Raillietina* (*Paroniella*) *kashiwarensis* in the chicken intestine is slow during the first five days after initial infection, but becomes rapid between the fifth and thirteenth day and progresses logarithmically according to the formula $G = Ae^{kn}$, where G stands for the growth value, A and k are constants, e is the natural logarithm base (2·71828) and n is the age in days. The weight to length ratio equals (0·007) $e^{0·38n}$ and reaches a peak on the thirteenth day, coinciding with the beginning of the separation of the "senile" segment. G.I.P.

903—Zoologicheski Sbornik. Akademiya Nauk Armyanskoi SSR.

a. ALOYAN, M. T., 1956.—[Nematodes of rodents in Armenia.] No. 9, pp. 125–170. [In Russian: Armenian summary pp. 168–170.]

b. AKHUMYAN, K. S., 1956.—[A study of the cestode fauna of rodents in Armenia.] No. 9, pp. 171–223. [In Russian: Armenian summary pp. 221–223.]

(903a) Aloyan records, from published and unpublished data, 40 nematodes from rodents in Armenia giving their hosts, general distribution and, where material was available, their description. He includes a list of the parasites under hosts with notes on the frequency and intensity of infection. G.I.P.

(903b) This paper summarizes the results of a study of cestode material collected during 1940–45 from 2,087 rodents in Armenia. Of the 22 species found, two have been described as new, i.e. *Hymenolepis skrjabiniana* Akhumyan, 1947 from *Meriones persicus*, and *H. mathevossianae* Akhumyan, 1948 from *Cricetus auratus* and 13 were new for Armenia. The following new host records were made, *Catenotaenia cricetorum* in *Cricetulus migratorius*, *Mathevotaenia symmetrica* in *C. migratorius* and *Mus musculus*, *H. straminea* in *M. musculus* and *Microtus arvalis*, *Aprostatandrya caucasica* in *M. arvalis* and *M. nivalis*, *Paranoplocephala brevis* in *M. nivalis*, *Staphylocystis procerca* in *Dyromys nitedula*, *Taenia* sp. Kirshenblat, 1940 in *Cricetus auratus* and *T. solium* larvae in *Citellus citellus*. The cestode fauna is also listed and discussed under hosts. G.I.P.

904—Zooprofilassi.

a. ROMBOLI, B., 1956.—"Echinococcosi secondaria del Dévé. Contributo alla conoscenza della rottura delle cisti da echinococco del fegato negli ovini." **11** (6), 343–358. [English & French summaries p. 358.]

(904a) Romboli discusses Dévé's secondary echinococcosis in different species in his preliminary report on the rupture of hydatid cyst in the liver of sheep. He classifies those ruptures into spontaneous and traumatic, and further subdivides them into: (a) Rupture without effusion; (i) rupture of hydatid membrane, leaving the external wall intact, (ii) rupture of the latter leaving the hydatid membrane intact, and (iii) rupture of both membranes but without issue to the circulatory system: (b) Rupture with effusion; (i) in the hepatic parenchyma, (ii) within a blood vessel or a bile-duct, and (iii) within the peritoneum. The favouring conditions are: (i) localization of cysts in the viscera and exposure thereof to trauma; (ii) youth of the infection; (iii) large size of the cysts; and (iv) high pressure of the hydatid fluid. N.J.

NON-PERIODICAL LITERATURE

905—*ANTIPIN, D. N., ERSHOV, V. S., ZOLOTAREV, N. A. & SALYAEV, V. H., 1956.—[Parasitology and parasitic diseases of agricultural animals.] Moscow: Gosudarstvennoe Izdatelstvo Selskokhozyaistvennoi Literaturi, 478 pp. [In Russian.]

906—*BABIĆ, I., DELAK, M. & MIKACIĆ, D., 1956.—" Nametnici i nametnicke bolesti domace peradi." [Parasites and parasitic diseases of poultry.] Zagreb: Jugoslavenska Akademija, 348 pp.

907—BACKHOUSE, T. C. & WOODHILL, A. R., 1956.—" Mosquito-borne diseases. Filariasis. Further studies on the hospitability of some *scutellaris* group and other mosquitoes towards *Wuchereria bancrofti* from New Caledonia." Noumea, New Caledonia: South Pacific Commission, Technical Information Circular No. 17, 4 pp. [Mimeographed.]

Backhouse & Woodhill confirm their earlier results on the susceptibility of *Aëdes pseudoscutellaris* and the inhospitality of *A. scutellaris katherinensis* to *Wuchereria bancrofti* and test four other mosquito species. These mosquitoes were allowed a single infective feed and were dissected after up to 17 days. 117 out of 121 *A. polynesiensis* became infected; *A. albopictus* was not a good host, 74% showing larvae in various stages of early arrested development. Of *A. vigilax* and *Culex fatigans*, Sydney strains were used, and these were highly susceptible to the New Caledonian strain of *W. bancrofti*, the infection rates agreeing closely with those obtained with these mosquitoes from New Caledonia [see abstract No. 920 below]. G.I.P.

908—*BORCHERT, A., 1956.—" Probleme der Parasitologie." Berlin: Akademie-Verlag, 305 pp.

909—BRINKMANN, Jr., A., 1956.—" Trematoda." Zoology of Iceland, **2** (11), 34 pp.

Brinkmann has examined 18 species of fish, 16 of birds and two of mammals from four localities in Iceland and found 34 species of trematodes; he gives short notes on their occurrence in the country and, for some, morphological data. The trematodes found include 21 species new for Iceland and *Gymnophallus bilis* n.sp. from *Clangula hyemalis*, *Yamagutia anarchichae* n.sp. from *Anarhichas minor*, and *Paralepidauchen avium* n.g., n.sp. from the intestine of *Larus ridibundus*. *P. avium* recalls *Lepidauchen stenostoma* but its body and eggs are only half the size; it most probably belongs to the Allocreadiidae or Acanthocolpidae. The author gives a list of all the trematodes known for Iceland with their hosts. G.I.P.

910—*DYK, V., 1956.—" Veterinarní parasitologie; čast obecná." Prague: Státní Pedagogické Nakladatelství, 2nd edit., 138 pp.

911—*ERGÜN, H., 1956.—" Die Helminthenfauna beim Huhn in der Umgebung von Ankara." Dissertation, Hanover.

912—*EYNARD, L., 1956.—" Les syndromes nerveux associés au parasitisme intestinal chez les volailles de Bresse." Thesis, Lyons, 73 pp.

913—FAN, P. C., HSU, J. & LIU, J. C., 1956.—" Survey of intestinal helminths and treatment of ascariasis with piperazine citrate among school children and students in Northern Taiwan, China." Taipei: National Defense Medical Center Selected Papers, pp. 12–22. [Chinese summary p. 22.]

A single stool examination for intestinal helminths of 1,701 children in Taipei yielded the following results: *Ascaris* in 24·6% of students, 31·5% schoolchildren and 23·3% pre-school children; hookworm in 6·3%, 0·8% and 0·3% respectively; *Trichuris* in 15·7%, 14·5% and 7·3% respectively; and *Enterobius* in 2·4% of schoolchildren and 1·4% of pre-school children. The incidence was higher in children in Taiwan than in those from the mainland.

418 cases of ascariasis received a one-day course of piperazine citrate and 78% of the 223 followed up became cured. Of 16 cases of ascariasis and 31 of hookworm infection treated with hexylresorcinol, 75% and 45·2% respectively were cured. G.I.P.

914—*FRIEDRICH, W., 1956.—" Die Verbreitung der parasitären Haustiererkrankungen in den Landkreisen Darmstadt und Bergstrasse." Dissertation, Giessen.

915—*FRÜHWALD, E., 1956.—" Parasitäre Tierkrankheiten im Kreise Scheinfeld." Dissertation, Giessen.

916—*FUCHS, D., 1956.—" Die Verbreitung parasitärer Erkrankungen bei den Haustieren im Stadt- und Landkreis Bayreuth." Dissertation, Giessen.

917—*GZHITSKI, S. Z. & ZDUN, V. I., 1956.—[Fascioliasis—a serious disease of farm animals.] Kiev: Akademiya Nauk Ukrainskoi RSR., 15 pp. [In Russian.]

918—*HABECK, I., 1956.—" Die Verbreitung parasitärer Haustierkrankheiten im Unterlahnkreis." Dissertation, Giessen.

919—IYENGAR, M. O. T., 1956.—" Annotated bibliography of filariasis and elephantiasis. Part 2. Studies on mosquitoes of the South Pacific region." Noumea, New Caledonia: South Pacific Commission, Technical Paper No. 88, xi+114 pp. [Mimeographed.]

920—IYENGAR, M. O. T. & MENON, M. A. U., 1956.—" Mosquito-borne diseases: filariasis. Studies on filariasis in New Caledonia." Noumea, New Caledonia: South Pacific Commission, Technical Information Circular No. 15, 3 pp. [Mimeographed.]

Batches of mosquitoes were allowed to feed on a carrier of *Wuchereria bancrofti* from New Caledonia and were examined three to eighteen days later. Susceptibility to the non-periodic strain was obtained in *Aëdes vigilax* (79 out of 84 becoming infected), *Culex fatigans* (46 out of 48 becoming infected) and, for the first time, in *A.* (*Finlaya*) *notoscriptus* (13 out of 18 becoming infected); the development of the parasite was normal. Only a single *A. aegypti* fed and 16 days later the larvae present were still in the early first instar stage. *A. vigilax* has been found to be naturally infected in endemic areas of New Caledonia but *A. notoscriptus* and *C. fatigans* did not occur in significantly large numbers, which seems to indicate that they are not of great practical importance. G.I.P.

921—*LARSEN, R., 1956.—" Über die Wirksamkeit des Desinfektionsmittels Euphagol VA auf Askariden- und Trichostrongyliden-Eier." Dissertation, Giessen, 52 pp.

922—*LERMER, F., 1956.—" Versuche mit dem Hexylresorcinpräparat HE III (Thomae) als Beitrag zur Wurmbekämpfung in der Kleintierpraxis." Dissertation, Munich.

923—*LÖBBERDING, C., 1956.—" Verbreitung parasitärer Tierkrankheiten im Kreise Ahaus (Westfalen)." Dissertation, Giessen.

924—MAWSON, P. M., 1956.—" Free-living nematodes. Section II. Enoploidea from Antarctic Stations." Report Series. B.A.N.Z. Antarctic Research Expedition, 6B (3), 37–74.

Mawson reports on the free-living marine eelworms collected from some of the stations sampled by the Discovery on the B.A.N.Z. A.R.E. cruises of 1929-30 and 1930-31. 36 species of the Enoploidea are recorded in this publication, of which twenty-seven are new. There is also one new genus, *Trichenoplus* (Enoplidae) with *T. antarcticus* n.sp. as type species, which is characterized by a greatly attenuated anterior end, well developed lips, large slender jaws without hooks and an external cephalic capsule present. The following species are recorded: Leptosomatidae: *Leptosomatides antarcticus* n.sp., *L. conisetosum* Stekhoven & Mawson, *Paraleptosomatides spiralis* n.sp., *P. elongatus* n.sp., *Thoracostoma articum* Saveljev,

T. demani n.sp., *T. anocellatum* Stekhoven & Mawson, *T. antarcticum* (Linst.), *T. angustifissulatum* n.sp., *Anticoma major* n.sp., *A. australis* n.sp., *A. stekhoveni* n.sp., *A. filicauda* n.sp., *Platycomopsis dimorphica* n.sp., *P. paracobbi* n.sp., *Paranticoma antarctica* n.sp.; Oxystomatidae: *Oxystomatina antarctica* n.sp.; Phanodermatidae: *Phanoderma campbelli* Allgén, *P. steineri* n.sp., *P. wieseri* n.sp., *P.* (*Alyncoides*) *speculum* Stekhoven & Mawson, *Klugea truncata* n.sp., *K. longiseta* n.sp., Enoplidae: *Oxyonchus australis* de Man, *Epacanthion brevispiculum* n.sp., *E. filicaudatum* n.sp., *Paramesacanthion microsetosum* (Allgén), *Mesacanthion infantilis* Ditlevsen, *Mesacanthoides wieseri* n.sp., *Enoploides oligotricha* n.sp., *E. pterognathus* n.sp., *Trichenoplus antarcticus* n.sp.; Oncholaimidae: *Oncholaimus paraegypticus* n.sp., *Pontonema leidyi* n.sp., *P. cobbi*, n.sp., *P. serratodentatum* n.sp. The report is illustrated by 37 figures and keys are given to the species of the genera *Platycomopsis* Ditlevsen and *Pontonema* Leidy. W.G.I.

925—NAUCK, E. G., 1956.—"Lehrbuch der Tropenkrankheiten." Stuttgart: Georg Thieme Verlag, viii+432 pp.

926—NELSON, S. & CRUIKSHANK, J. M., 1956.—"Filariasis in Fiji 1944–1955." Fiji: Medical Department, 50 pp. [Mimeographed.]

This extensive report describes the various stages in the progress of the survey and control of filariasis in Fiji. *Aëdes scutellaris pseudoscutellaris*, now known to be a complex of two species—*A. pseudoscutellaris* and *A. polynesiensis*—is the principal vector although *Culex fatigans* and *A. fijiensis* have also been implicated. The main measure of control directed against *A. pseudoscutellaris* has been by eradication of its breeding places within the villages and for a radius of 100 yards around them, but difficulties have arisen as this entails much hard physical work on the part of the population, and to them shows no immediate benefit. Insecticides have been little used as *A. pseudoscutellaris* does not rest in the houses and biological control by the introduction of *Megarhinus* spp. has not shown much promise. The training of field workers is outlined and the survey methods for the incidence of infection and of filarial disease are described in detail. Examination of 1 c.c. of venous blood has been shown to give 26% more positives than 20 cu.mm. of finger blood and this is of particular value in detecting light infections. The Knott technique was used. Four experiments on control by treatment with diethylcarbamazine have been followed up for at least a year and it is concluded that the administration of 50 mg. on one day each month is the most promising method. The paper is illustrated by a series of tables and photographs, two graphs and one map. S.W.

927—*NÖLKE, J., 1956.—"Verbreitung parasitärer Tierkrankheiten im Landkreis Beckum." Dissertation, Giessen.

928—*PFEIFFER, H., 1956.—"Beitrag zur Diagnostik des Bandwurmbefalles der Hühner." Dissertation, Vienna.

929—PETROCHENKO, V. I., 1956.—[Acanthocephala of domestic and wild animals. Volume I.] Moscow: Izdatelstvo Akademii Nauk SSSR, 435 pp. [In Russian.]

The monograph by Petrochenko on the Acanthocephala will appear in two volumes. This first volume includes the complete general section giving the history, characteristic features, embryonic and larval development, distribution, ecology, phylogeny and evolution of the group, and part of the revised systematic section which deals with Acanthocephala of fish. Basing his conclusions on the correlation which he found between the structure of eggs and larvae and the biological and ecological characteristics of the worms, Petrochenko divides the class into three well defined groups: (1) Neoechinorhynchinea n. subclass (syn. Eoacanthocephala); (2) Echinorhynchinea n. subclass (syn. Metacanthocephala *pro parte*) and (3) Gigantorhynchinea n. subclass. 1. Neoechinorhynchinea is subdivided into the orders Neoechinorhynchida and Acanthogyrida. The Neoechinorhynchida comprises three families (i) Neoechinorhynchidae with the subfamilies Neoechinorhynchinae, Eocollinae n.subf. erected for *Eocollis* and Gracilisentinae n.subf. erected for *Gracilisentis* which contains

G. variabilis n.comb.; (ii) Hebesomidae; and (iii) Tenuisentidae with Tenuisentinae n.subf. erected for *Tenuisentis*, *Pandosentis* and *Tonaorhamphus*, and Atactorhynchinae n. subf. erected for *Atactorhynchus* and *Floridosentis*. The genus *Eosentis* with its two species *E. rigidus* and *E. formosanus* becomes a synonym of *Neoechinorhynchus*, which also includes *N. paucihamatus* n.comb. 2. Echinorhynchinea is subdivided into the orders Echinorhynchida without spines on the body and Polymorphida n.ordo with spines present on the body. The Echinorhynchida comprises four families (i) Echinorhynchidae with the subfamilies (a) Hypoechinorhynchinae n.subf. erected for *Hypoechinorhynchus*, *Bolborhynchus*, *Paracanthocephalus* and *Acanthocephaloides*, (b) Echinorhynchinae which contains *Echinorhynchus*, *Acanthocephalus*, *Echinorhynchoides* with *E. nudus* n.comb., *Pseudoechinorhynchus* n.g. (syn. *Echinorhynchus* pro parte) erected for the new combinations *P. clavula*, *P. cinctulus*, *P. dirus*, *P. lenok*, *P. monticellii* and *P. parasiluri*, and *Metechinorhynchus* n.g. (syn. *Echinorhynchus* pro parte) for the new combinations *M. salmonis*, *M. alpinus*, *M. baeri*, *M. campbelli*, *M. jucundus*, *M. lageniformis*, *M. truttae*, (c) Heteracanthocephalinae n.subf. with *Heteracanthocephalus* n.g., erected for *H. peltorhamphi* n.comb., and *Sachalinorhynchus* n.g. made by Krotov & Petrochenko for *S. skrjabini* n.sp. from *Nemacheilus barbatulus toni*, and (d) Leptorhynchoidinae n.subf. erected for *Leptorhynchoides*; (ii) Fessisentidae; (iii) Cavisomatidae with *Cavisoma*, *Rhadinorhynchoides*, *Filisoma* and *Pararhadinorhynchus* (the last three transferred from Rhadinorhynchidae); and (iv) Pomphorhynchidae which includes *Pomphorhynchus kostylewi* n.sp. from *Varicorhinus capoeta sevangi*. The second order Polymorphida is subdivided into four families: (i) Arhythmacanthidae which includes *Pseudorhadinorhynchus neobythitis* n.comb. and *Hemirhadinorhynchus leuciscus* n.g., n.sp. Krotov & Petrochenko from *Leuciscus waleckii*; (ii) Rhadinorhynchidae with (a) Rhadinorhynchinae, (b) Serrasentinae n.subf. erected for *Serrasentis*, and (c) Polyacanthorhynchinae n. subf. containing *Polyacanthorhynchus* and *Protorhadinorhynchus* n.g. erected for *P. ditrematis* n. comb. and *P. carangis* n. comb.; (iii) Telosentidae n. fam. containing *Telosentis* and *Illiosentis*, and (iv) Polymorphidae (dealt with in the second volume). Oligacanthorhynchida n.ordo, Gigantorhynchinea n.subclass., Filicollidae n.fam., *Parafilicollis* n.g., *Pseudoacanthocephalidae* n.fam., *Pseudoacanthocephalus* n.g, Prosthorhynchidae n.fam., Corynosominae n.subf. and *Skrjabinorhynchus* n.g. are named and briefly discussed in this volume but their full diagnoses and systematic subdivision appear in Volume II. Petrochenko discusses the zoogeography of these helminths, lists them under the cyclostome, fish, amphibian and reptilian hosts and gives the percentage infections for the different fish groups. The volume includes a list of genera and of species, an extensive list of references and 181 drawings. G.I.P.

930—*POTEMKINA, V. A. & DEMIDOV, N. V., 1956.—[Handbook on the diagnosis and treatment of helminthiasis in animals.] Moscow: Gosudarstvennoe Izdatelstvo Selskokhozyaistvennoi Literaturi, 351 pp. [In Russian.]

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.]

a. ANDREEVA, N. K., 1956.—[New principles in the systematics of some trichostrongylids (Ostertagiea).] pp. 18–19.

(931a) Andreeva reports the discovery of new morphological elements in the males of some trichostrongylids (Ostertagiea). These elements include the genital cone with its separate elements. Based on these new characteristics, new genera, namely, *Capreolagia*, *Teladorsagia* and *Mulflonagia* were established. [The diagnostic characters of these genera are not given here.] It was decided to leave in the genus *Ostertagia* all the species characterized by a proconus and to include all the others in the new genus *Ostertagiella* with type species *O. occidentalis*. New diagnoses of *Ostertagia*, *Marshallagia*, *Spiculopteragia*, *Rinadia* and *Skrjabinagia* are stated to have been given. Differentiation between genera and species is based on the structure of the genital cone with its supporting apparatus and the position of the latter, the structure of the dorsal ray, and the degree of sclerotinization of the spicules and the gubernaculum. As a result of this revision some species are removed from *Skrjabinagia* and placed in other genera. N.J.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

b. ANDRIEVSKAYA, N. Y., 1956.—[Helminth fauna of domestic birds in the Odessa area.] pp. 20–21.
c. BELSKI, B. I., 1956.—[The rendering harmless and use of town sewage.] p. 23.
d. BIDULINA, M. I., 1956.—[Larval trematodes in molluscs in the river Dnieper and their distribution.] pp. 24–26.
e. BLITSHTEIN, I. I., 1956.—[Concomitant infections of various helminths and *Lamblia* in the intestine of man.] p. 29.
f. VERGUN, G. I., 1956.—[The larval trematodes of some molluscs in the central area of the Northern Donets river.] pp. 30–32.
g. GELLER, I. Y., 1956.—[*Echinococcus* infection in man and farm animals in the post-war period in the Nikolayev area.] pp. 35–36.

(931b) A three-year survey in the Odessa area of chickens, turkeys, geese and ducks showed helminth infections to be very frequent. In some districts as many as 100% of the birds were infected with nematodes and 60% to 70% with cestodes. Trematodes were less common; none was found in turkeys. The 20 helminth species found are named and the number of birds infected and the infection intensity are tabulated for each of them. G.I.P.

(931d) Bidulina stresses the importance of studying the larval trematode fauna in waters feeding new reservoirs planned for fish breeding. In the Dnieper, 24% to 33% of molluscs were infected with 53 species of cercariae, nine of adolescariae, one of tetracotyle and with one adult trematode. The cercariae fall into eleven systematic groups and include the following 15 species which the author states are new to science: *Cercaria glabra*, *C. cinerea* and *C. borysthenica* from *Lymnaea stagnalis*; *C. lacustris*, *C. media*, *C. markewitschi* and *C. zduni* from *Planorbis planorbis*; *C. glauca* and *C. spinosa* from *Coretus corneus*; *Cercaria oviformis* from *Bithynia leachi* and *Fagotia acicularis*; *C. mona* and *C. viviparae secunda* from *Viviparus viviparus*; *C. flagellifera* and *C. paradoxa* from *Pisidium amnicum*; and *C. ruthenica* from *P. amnicum* and *Sphaerium rivicola*. The trematode fauna was quantitatively and qualitatively richer in the middle section of the river than in the terminal section, and in both cases richer than in the delta and the section near the source. Infections were lower in the normal river bed than in its expansions. G.I.P.

(931e) Blitshtein reports on the studies of simultaneous infections with various helminths and *Giardia*. 1,077 children, one to six years old, and 319 adults were examined in two districts. The average incidence of infection with ascarids and trichurids was 46·5% in the first district and 7·7% in the second. Total incidence of infection of children with *Giardia* was 29·1% in the first district and 19% in the second district; whereas only 13% of adults had *Giardia* infection in the first district and 6·9% of them in the second district. *Giardia* infection was seven times less frequent among children and three times less frequent among adults parasitized by trichurids and ascarids than among persons free from those helminths. *Giardia* infections were more than twice as frequent in persons infected with trichurids than in those infected with ascarids. In the district with high incidence of infection with trichurids and ascarids *Hymenolepis nana* infection was nine times less frequent than in the district with low incidence. N.J.

(931f) Of 2,511 molluscs (19 species) examined in the central area of the Northern Donets river, 20·98% were infected with 58 species of larval trematodes. These are named and listed under groups. The identification of ten is doubtful and 17 remain unidentified; the most heavily infected molluscs were *Sphaerium rivicola* (43%) and *Coretus corneus* (33%), while the specifically richest fauna (8 to 12 species) occurred in *Lymnaea stagnalis*, *Galba palustris*, *C. corneus*, *Planorbis planorbis* and *Bithynia tentaculata*. *B. leachi* and *B. tentaculata* harboured sexually mature *Asymphylodora progenetica*. G.I.P.

(931g) Geller has studied the occurrence of echinococcosis and mapped its foci in the Nikolayev area using hospital patients and slaughterhouse statistics gathered during the last nine years. At the Nikolayev slaughterhouse the infection of cattle varied from 19% to 3·9% and of sheep from 8·7% to 2% between 1949 and 1954. Human infections were chiefly among the farming population. An examination of dogs in the focal areas showed these to represent a danger of infection to man and stock. G.I.P.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

h. GERBILSKI, V. L., BOGDANOVICH, V. V., KUKIBNAYA, L. A. & STEBELSKI, S. E., 1956.—[The route by which larvae of Ascaridata enter the bronchi and blood vessels.] pp. 37–40.
i. GUBSKI, V. S., 1956.—[The helminth fauna of game birds of the lower Dniester.] pp. 41–42.
j. DELYAMURE, S. L., 1956.—[New data on the helminth fauna of *Delphinapterus leuca*] p. 43.
k. DRIZHERUK, O. E., 1956.—[The toxicity of *Ascaris* organs and tissues as determined by skin reactions.] pp. 44–45.
l. ZDUN, V. I., 1956.—[Some data on the distribution of trematode larvae in the waters of the Ukraine S.S.R.] pp. 57–58.

(931h) Gerbilski *et al.* studied the migration of *Ascaris lumbricoides* and *A. suum* larvae in experimentally infected mice, rats and guinea-pigs and the migration of *Toxocara* larvae in dogs spontaneously and experimentally infected through the uterus. Having compared the size of larvae at different stages with that of capillaries on their alleged route, and having traced larvae on their migration the authors find that this starts in the internal circulatory system of the appendix. Ascarid larvae were found in the appendix three to four hours after infection of mice. The authors further conclude that the larvae do not penetrate into the general circulatory system through the capillaries of the lung alveolae, but directly through the branches of the pulmonary artery, which anastomose with those of the bronchial artery. Some of them enter the lumen of the bronchi via the lining epithelium. N.J.

(931i) Four species of wild ducks and one species each of wild goose, coot and pochard were examined in the lower Dniester area. The number [but not the names] of the helminth species present in each of the bird species is given. Of 36 helminths found 23 can also parasitize domestic geese and ducks, and the following are listed as the most pathogenic to domestic birds in the area: *Prosthogonimus ovatus*, *Tracheophilus sisowi*, *Notocotylus attenuatus*, *Hymenolepis setigera*, *Drepanidotaenia lanceolata*, *Amidostomum anseris*, *Porrocaecum crassum*, *Polymorphus magnus* and *Filicollis anatis*. G.I.P.

(931j) Delyamure recounts the helminths listed for the white whale (*Delphinapterus leucas*) in his monograph (1951), viz., *Leucasiella mironovi*, *Anisakis kükenthalii*, *A. simplex*, *Stenurus minor*, *S. pallasii*, *Carassicauda giliakiana*, *Corynosoma strumosum*, *Odhneriella seymouri* and *Otophocaenurus oserskoi*. The last two species, previously known from the Okhotsk Sea, he now records also from the White Sea. *S. arctomarinus* n.sp. was found in the lungs of *D. leucas* in the White Sea. The females are similar to those of *Halocercus* and the males trend towards those of *Stenuroides*. [No other characters of the new species are given.] G.I.P.

(931k) Drizheruk prepared extracts in physiological saline from different organs of *Ascaris suum*. He studied the toxicity of those extracts by injecting them subcutaneously into guinea-pigs. Extracts were tested from: the musculo-epidermal layer, the cuticle, male genitalia, female genitalia and intestine. Fluid from the body-cavity and physiological saline, in which ascarids had lived for 24 hours, were also tested. The highest toxicity was shown by the last-named and by the intestinal extract. Extract from the musculo-epidermal layer was less toxic, while those from the cuticle and the male and female genitalia showed no toxicity. N.J.

(931l) The distribution of the cercarial fauna of molluscs in the Ukraine was analysed according to geographical zones. Xiphidiocercariae occur in all waters. In large collections of water, particularly rivers, other groups are also found. In the forest zone half of the 124 species known for the Ukraine occur. In the forest-steppe zone 90 cercariae occur and those of *Fasciola hepatica* and *Opisthorchis felineus* are common in the west and east respectively. In the steppe zone numerous echinostome and furcocercous cercariae, particularly those of the *Strigea* and *Vivax* groups are characteristic. In the mountain zone only about ten species occur and in high altitude streams *Cercaria limnaeae truncatulae* and *C. vulgaris* n.sp. are the only forms found. [No other details of the new species are given.] G.I.P.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

m. ZDUN, V. I., 1956.—[Cercariae of the lower Danube basin.] pp. 59–60.
n. ZDUN, V. I. 1956.—[The occurrence of *Fasciola hepatica* larvae and their host, *Galba truncatula*, under the conditions of the western areas of the Ukraine S.S.R.] pp. 61–62.
o. KALOSHINA, N. A., 1956.—[*Artemisia daghestanica* tested as an anthelmintic.] pp. 63–64.
p. LEONOV, V. A., 1956.—[Helmintho-epizootiologic significance of fish-eating birds in the Dnieper estuary.] pp. 74–75.
q. LUKASHENKO, N. P., 1956.—[Study of immuno-biological diagnosis of trichinelliasis.] pp. 79–81.

(931m) Thirty species of cercariae were found on examination of 1,475 molluscs belonging to 21 species from the lower Danube basin. The most frequent were cercariae the adults of which parasitize birds. Of these six species belonged to the echinostome group, six to the furcocercous group (Strigeidae) and three to the monostome group (Notocotylidae). Less frequent were six species of cercariae the adults of which parasitize fish, and of these the most common were *Cercaria cristata*, *C. micrura* and cercariae of *Bucephalus* sp. Two *Gymnophallus* cercariae [not named] were new for fresh-water molluscs in the Ukraine. G.I.P.

(931n) The biotopes of *Galba truncatula* in the Ukraine were small and isolated in the steppe zone and on dry pastures of the forest-steppe zone, but more frequent in other zones. The snail density varied from about 100 to 120 specimens per 40 m. along rapid mountain streams to 70 to 100 specimens per sq.m. along stagnant waters in the steppe and forest-steppe. The infection of *G. truncatula* with *Fasciola hepatica* larvae was on the average 2% to 3% for the territory examined; in mountain and foot-hill areas it was 11%; in the steppe it may reach high proportions; in the forest-steppe it was only 5% while in the forest zone it fell to 2%–4%. During the period 1954 to 1956 the density of molluscs and their infections increased due to the prevailing high humidity. G.I.P.

(931 o) Kaloshina reports that as a result of analysis it was established that the aerial part of *Artemisia daghestanica* contains 2.9% of ethereal oil (dry weight). The greatest quantities of oil were found in the flowers. Two fractions of the oil have been obtained, one containing hydrocarbons and the other composed chiefly of methylchavicol. The efficacy of *A. daghestanica* ethereal oil and resin against ascarids from cats *in vivo* and *in vitro*, and against ascarids from pigs *in vitro* was found to be of the order of 91%. The toxicity to the host was ten times less than that of *Chenopodium* oil. N.J.

(931p) The helminth fauna of 449 fish-eating birds from the Black Sea coast was examined. Of the 108 helminth species belonging to 77 genera found, 17 species and two genera are said to be new and for 32 species new host records are made [none are named]. *Echinochasmus cohensi*, *Galastosomum puffii* [?*Galactosomum puffini*] and *Echinuria heterobrachiata* are reported for the first time from the U.S.S.R. *Cercarioides baylisi* is made a synonym of *C. aharoni*. Comment is made upon an analysis of the change in the helminth fauna of fledgelings with their age and of differences in the helminths of young and adult birds, and upon a study of the fauna of fish-eating birds as spreaders of infection among fish and to other economically important animals in this area which is concerned with fish breeding. G.I.P.

(931q) Lukashenko has studied the immuno-biological diagnosis of trichinelliasis in 185 rabbits, 130 guinea-pigs and 24 pigs (16 of which were experimentally infected) under laboratory conditions and in 1,606 slaughtered pigs. Four antigens were prepared from *Trichinella* larvae, namely, saline extract, a polysaccharide fraction, an acid-soluble protein fraction and an antigen prepared by Boivin's method. Intradermal and precipitin tests proved the acid-soluble protein fraction to be the most efficient. In experimentally infected pigs it was 100% efficient from the 21st to the 135th day after infection, and 81·8% efficient from the seventh to the twelfth day. It gave negative results in experimental infection with trichuriasis and ascariasis in swine. In experimentally infected rabbits it was 100% efficient from the

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

r. LUKIN, E. I., 1956.—[Parasitological significance of leeches occurring in the Ukraine.] pp. 82–84.
s. MAZUPMOVICH, B. N., 1956.—[Interrelationships of the helminths of amphibians.] pp. 85–86.
t. MONCHENKO, V. I., 1956.—[Copepods as intermediate hosts of helminths.] pp. 87–88.
u. NAKLADOVA, V. B., 1956.—[Overwintering of *Trichuris* eggs under the climatic conditions of Kiev.] p. 89.
v. NEKIPELOVA, R. A., 1956.—[The migration and survival of trichostrongylid larvae of sheep in the Alma-Ata region.] pp. 90–91.
w. PARAMONOV, A. A., 1956.—[On the phylogeny of phytonematodes.] pp. 99–102.

17th to the 512th day after infection but only 61·1% efficient from the fifth to the twelfth day. In experimentally infected guinea-pigs it was 100% efficient from the 8th to the 368th day after infection. N.J.

(931s) An analysis of the helminth fauna of five species of Anura showed that relationships of both an antagonistic and synergic character occurred. Antagonism was encountered between the lungworms *Haematoloechus* and *Rhabdias bufonis* and the intestinal worms *Opisthioglyphe ranae* and *Aplectana acuminata*, while a synergic relationship existed between intestinal acanthocephalans and intestinal nematodes and trematodes. These conclusions are supported by numerical data. G.I.P.

(931t) For the Ukraine, Monchenko lists four species of *Diaptomus* and 14 species of *Cyclops*-type which are intermediaries for helminthiases of fish used for breeding and domestic aquatic birds. He gives brief notes for each of these species naming the helminths concerned (various species of *Digramma*, *Drepanidotaenia*, *Dicranotaenia*, *Diphyllobothrium*, *Hymenolepis*, *Proteocephalus*, *Ligula*, *Triaenophorus*, *Schistocephalus* and the nematode *Camallanus*). G.I.P.

(931u) Nakladova reports that *Trichuris* eggs at different stages of development did not perish during the winter under the climatic conditions of Kiev. Eggs in early developmental stages, placed in the soil in the autumn produced infective larvae the following September. Samples which contained 2% to 4% infective eggs before the onset of snowy weather were found to contain 70% to 80% infective eggs by the following April. Infectivity was maintained through the spring, summer and autumn periods and into the following winter. The highest percentage of infective eggs was found during the autumn. N.J.

(931v) Nekipelova reports that in the Alma-Ata region trichostrongylid larvae were found to migrate on to the grass at temperatures of 4° C. to 28°C. and at relative humidities between 85% and 100%. An intensity of migration curve was plotted and almost exactly corresponded with the curve of relative humidity but was inversely related to the temperature curve. Larvae descended the grass as the water film on it receded, which explains the small numbers of larvae on herbage at mid-day. The author rejects the possibility of larvae being shaken off mechanically. The life span of trichostrongylid larvae was found to be 180 to 330 days. The resistance of *Trichostrongylus* larvae to unfavourable conditions was greater than was that of *Haemonchus* larvae. Both *Trichostrongylus* and *Haemonchus* larvae survived the winter. They also survived the hot summer even when the grass was cut four times during eleven months. Larvae which did not reach the infective stage the same year did so the following spring. N.J.

(931w) Paramonov, discussing the phylogeny of phytonematodes, does not consider the position of the subclass Phasmidia in the Nematoda as correct. He believes that Phasmidia have a secondary origin and that the question of the origin of phytonematodes is not relevant to that of other nematodes. Subdivision of the tylenchids into free and parasitic forms is also considered incorrect as they have the same organization. It is suggested that free living tylenchids should be considered as primitive "mycohelminths" living on fungal mycelia. The author concludes that these "mycohelminths" penetrated into plants following the fungi on which they fed and eventually evolved into parasites of the plants. N.J.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

x. POGREBNYAK, L. P., 1956.—[Distribution of echinococcosis among pigs.] pp. 103–104.
y. SALATA, A. T., 1956.—[Changes in the intestinal wall under the influence of the metabolic products of ascarids.] pp. 105–106.
z. SALATA, A. T., 1956.—[The influence of metabolic products of ascarids on the blood of dogs.] pp. 107–108.
ba. SKRYABIN, A. S., 1956.—[Data on the helminth fauna of marine mammals of the Okhotsk Sea and Pacific Ocean.] pp. 109–110.
bb. SMOGORZHEVSKAYA, L. A., 1956.—[Helminth fauna of fish-eating birds in the Dnieper valley.] pp. 111–112.
bc. SOBOLEV, A. A., 1956.—[The application of a comparative biological method in the systematics of nematodes.] p. 113.

(931x) The post-mortem examination of about 6,000 pigs from the right bank territory of the Ukraine showed hydatid and *Cysticercus tenuicollis* infections to be widely and evenly distributed in the area. The average infection rate was comparatively high (12%), while intensities were low. G.I.P.

(931y) Salata studied the changes in the intestinal wall of dogs caused by the metabolic products of ascarids. Desquamation of the epithelium, hyperaemia, intestinal stasis, hyperplasia of the lymphoid tissue, sclerosis of the connective tissue and necrosis were observed. The author concludes that morphological changes in the intestinal wall, caused by the metabolic products of ascarids, depend on the individual reactivity of the animal. N.J.

(931z) Salata injected intravenously into a group of dogs a single dose of 0·5 ml. per kg. body-weight of ascarid metabolic products. Another group of dogs received 10·0 ml. per kg. of these products in the same way, daily over one to one-and-a-half months. In a third group of dogs multiple doses were injected into the intestine by a modification of Pavlov's method. After one to one-and-a-half months the same animals received those metabolites intravenously. The toxic effects of the ascarid metabolic products included vomiting, fall in blood pressure and spasms. In animals in which the toxins were introduced intravenously, the haemoglobin level and the sedimentation rate remained normal. Eosinophils disappeared within 20 to 30 minutes. In animals in which the toxins were introduced into the intestine, the eosinophil count showed only temporary variations. When the toxin was intravenously introduced in a single dose, the eosinophil count fell to normal after a few days. The author concludes that the eosinophil count is a useful indicator of the condition of the animal in ascarid intoxication. N.J.

(931ba) An expedition to the Pacific Ocean conducted by the Oceanographical Institute of the Russian Academy of Sciences has collected, amongst other material, helminths from Cetacea and Pinnipedia. 24 of the helminth species have already been studied. The work is said to contain: (i) new species (of which the diphyllobothriid *Tetragonoporus abductocephalus* n.g., n.sp. from *Physeter catodon* is here mentioned but not fully described); (ii) several new host records (of which examples are given); and (iii) original redescriptions of insufficiently described species. G.I.P.

(931bb) The helminth fauna has been studied of 388 fish-eating birds (belonging to 34 species) collected during the years 1948 to 1953 in the Dnieper valley. 89·4% of the birds were infected: 82·9% with digenetic trematodes (82 species), 32·4% with cestodes (30 species), 37·1% with nematodes (23 species) and 1·5% with acanthocephalans (three species). A number of new host and geographical records are said to be made. [A study of the trematode fauna has appeared in *Parazitologicheski Sbornik*, 1956, **16**, 244–263. For abstract see Helm. Abs., **25**, No. 270d.] G.I.P.

(931bc) Sobolev discusses his own work (1949) and the independent work of Chabaud (1954) in both of which it is proposed to create in the suborder Spirurata a new superfamily—the Physalopteroidea. The author disagrees with the proposal of Osche (1955) to suppress the subfamily Echinurinae Sobolev, 1943 and to create a new species of *Stammerinema*. He also discusses briefly comparative biological methods in helminthology using embryological and ecological data, and the experimental possibilities inherent in the use of the tagged atom. N.J.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

bd. TRACH, V. N., 1956.—[Dependence of the infection of sheep with strongylate nematodes on the age of the animal and on the season.] pp. 114–116.

be. SHEVCHENKO, N. N., 1956.—[The parasite fauna of some species of amphibians and aquatic reptiles in the central area of the Northern Donets river.] pp. 117–118.

bf. SHULTS, R. S. & DAVTYAN, E. A., 1956.—[Variability and virulence of helminths.] pp. 119–120.

bg. BERZINA, V. K., KABANOVSKAYA, R. G. & PETRICHENKO, D. I., 1956.—[Eradication of enterobiasis in children's homes.] pp. 127–129.

bh. ZHUKOVSKAYA, O. A., 1956.—[Meningitis of ascarid aetiology.] p. 130.

bi. MIRETSKI, O. Y., 1956.—[Influence of natural ultra-violet radiation on *Ascaris lumbricoides* eggs.] pp. 134–136.

(931bd) Changes in infectivity of strongylate nematodes to sheep and the viability of free infective larvae depend on the season and on the age of the sheep, being largely conditioned by the development of immunity in the animals. Thus in the forest territory of the Ukraine, peak infection with *Chabertia*, *Haemonchus*, *Ostertagia*, *Trichostrongylus* and *Nematodirus* occurred during August–September in lambs. In sheep aged over one year two peaks occurred, one during April–June and the other during August–September; *Nematodirus* was found only occasionally. Following the first infection of lambs, worms developed to maturity in three to five weeks, while on second and subsequent infections the development lasted from two to six months. Larvae from eggs passed by lambs survived drying for 45 to 207 days at 18°C. to 21°C. and relative humidities between 54% and 77%, while those from eggs passed by sheep survived only for 29 to 60 days under these conditions. G.I.P.

(931be) About 212 amphibians (*Rana ridibunda*, *R. esculenta*, *Bombina bombina* and *Pelobates fuscus*) and 63 aquatic reptiles (*Emys orbicularis* and *Natrix natrix*) were examined for parasites. 21 species of trematodes, seven of nematodes and one each of cestodes and acanthocephalans were found. An interesting occurrence in *R. ridibunda*, *R. esculenta* and *P. fuscus* was *Halipegus kessleri*. Metacercariae of *Encyclometra natricis* and *Astiotrema* sp., common parasites of *N. natrix*, were found in all four anurans. *N. natrix* was highly infected with larval *Alaria alata* and *Astiotrema* sp. G.I.P.

(931bf) The authors offer some general remarks on the morphological and physiological variability of species in connection with their differentiation. They propose to distinguish the terms "infective ability" and "infectivity"; the latter, in its new narrow conception, indicates an individual, basic, racial or specific property of the parasite, ensuring favourable development, multiplication and the ability to infect the relevant host. Terms like infectivity and virulence (pathogenicity) have a general application to all parasitic groups. G.I.P.

(931bg) Cure of *Enterobius* infections was attempted through the prevention of auto- and reinfection of children in two homes and two playgrounds near Kiev. Necessary sanitary and hygienic improvements were installed and the personnel and parents suitably instructed. At the end of three summer months, 39 out of 54 infected children had been freed from enterobiasis. G.I.P.

(931bh) Twelve cases of ascaridial meningitis were examined. The original work is said to contain a detailed description of the characteristic symptoms and differential diagnosis. As intoxication in this infection is maintained and aggravated by the digestion of dead ascarids, their timely removal using laxatives and cleansing enemata is important. Rapid worming may increase the number of dead worms and cause deterioration in the condition of the patient. G.I.P.

(931bi) Studying the detrimental effect of direct sunlight on *Ascaris lumbricoides* eggs, Miretski has shown that when temperature and moisture content remain normal, the eggs are not killed by exposure to natural ultra-violet rays. Those reaching the earth are the long wave rays to which the eggs are less sensitive. The eggs are furthermore protected by their yellow-brown pigmentation. G.I.P.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

bj. SELIVANOV, K. P., 1956.—[Malaria and helminth infections of the population of the Ukraine and their control in the years 1956 to 1960.] pp. 138–142.

bk. TARABAN, A. S. & KOSOVSKI, Y. Y., 1956.—[Efficacy of heptylresorcinol in ascariasis.] pp. 143–144.

bl. SHEVCHUK, M. K. & PESTUSHKO, E. I., 1956.—[The epidemiology of opisthorchiasis in the Dnepropetrovsk region.] pp. 145–146.

bm. SHULMAN, E. S., 1956.—[Medical helminthology in the Ukraine.] pp. 147–152.

bn. SHULMAN, E. S., 1956.—[Planning of scientific work in medical helminthology in the Ukraine as part of the sixth five-year plan.] pp. 153–154.

bo. GANASEVICH, V. I. & SKOVRONSKI, R. V., 1956.—[Treatment of rabbits against fascioliasis.] pp. 162–163.

bp. ZAIKOVSKI, Y. F., 1956.—[Mineral-phenothiazine bricks—an effective measure in the control of helminthiasis in sheep.] pp. 167–168.

bq. IVANOVA, P. S. ET AL., 1956.—[*Cysticercus tenuicollis* in farm animals.] pp. 173–176.

(931bj) The control of helminthiases in the Ukraine has not advanced greatly in the past owing to the insufficient training in parasitology received by doctors and medical staff. The infections mentioned as affecting the population are *Enterobius*, *Ascaris*, *Trichuris*, *Trichinella*, *Ancylostoma*, *Hymenolepis*, *Taenia*, *Echinococcus* and *Diphyllobothrium*, while the low record of opisthorchiasis is shown to be unrealistic. Selivanov describes the direction to be taken in the control of these helminths in the next five years. G.I.P.

(931bk) In an area of the Ukraine where ascariasis was wide-spread among the population, 108 persons were treated with heptylresorcinol and 90 were cured. The dose used was 1·2 gm. to 1·5 gm. for adults and 0·1 gm. per year of age for children aged up to ten years. It was given on an empty stomach and was followed by a laxative and by enemata on two to three subsequent nights. Stomach pains, nausea and dizziness were observed in eight patients, after the administration of the laxative. This treatment proved more convenient than oxygen therapy which required three consecutive applications. G.I.P.

(931bl) In the Dnepropetrovsk region *Opisthorchis felineus* disease is of local origin and is most frequent in areas along the lower Dnieper river. 61·5% out of 250 cats examined were infected. In areas in which cats were infected, *O. felineus* was also found among the population (42 persons infected out of 28,000 examined). According to Pestushko the molluscan intermediate host (*Bithynia*) was present in 15 out of 28 water reservoirs searched; and 0·8% of these molluscs harboured the cercariae. G.I.P.

(931bo) Carbon tetrachloride in doses of 0·3 ml. per kg. body-weight and mixed in equal parts with vaseline oil, was successfully used against fascioliasis in 41 rabbits. Faecal examination ten days later was negative in all. Subcutaneous injection proved easier than gastric intubation. A loss of appetite was observed for three days after treatment. Doses of 0·2 ml. per kg. had proved too small. G.I.P.

(931bp) Bricks of one part of phenothiazine to three parts of chalk and six parts of salt were given to sheep on pasture. Each animal received about 120 gm. to 150 gm. of pure phenothiazine per season. A detrimental effect was observed on various helminths (*Dictyocaulus*, *Haemonchus*, *Ostertagia*, *Trichostrongylus* and others). Few deaths occurred and inflammation of the stomach, liver and kidneys was absent. The sheep were also freed of fascioliasis. Wool production doubled. G.I.P.

(931bq) *Taenia hydatigena* is widely distributed in the Ivanov region and occurs in natural foci. This is indicated by the occurrence of larvae in sheep and goats (28·5%), pigs (29·8%) and elk (80%), and of adults in stray dogs (16·4% of 128) and wolves (nine out of 13). Working and hunting dogs were infected to a lesser extent (4·1% of 791), while 24 foxes, four raccoons, one bear and one marten were not infected. Pathological changes and weight loss associated with the infection in sheep and the distribution of cysts in the animal are briefly described. G.I.P.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

br. ISMAGILOVA, R. G., 1956.—[The early allergic diagnosis of coenuriasis in sheep and its practical and biological significance.] pp. 177–178.
bs. KRIKUNOV, M. S., 1956.—[Testing the anthelmintic properties of oxygen in ascariasis in pigs.] p. 179.
bt. POGREBNYAK, L. P., 1956.—[The significance of the more important helminthiases of pigs in the economy of animal breeding.] pp. 180–182.
bu. SAVCHUK, N. A., 1956.—[The distribution and control of helminthiases of farm animals in the Odessa area.] pp. 183–184.
bv. TRACH, V. N., 1956.—[The effect of phenothiazine on the activity of strongylate nematodes of sheep.] pp. 188–189.
bw. TRACH, V. N., 1956.—[Paramphistomiasis in young cattle.] pp. 190–191.
bx. ULYANOV, S. D., 1956.—[*Avitellina* in sheep in southern Kazakhstan.] p. 193.

(931br) Ismagilova, using for a number of years the allergic reaction for the diagnosis of cerebral coenuriasis in sheep, found the polysaccharide extract from scoleces to be the allergen of preference. In experimentally infected sheep the reaction was first positive on the 12th day and so continued for many months. To determine the lowest level of infection capable of stimulating a reaction, lambs were infected with doses of from one to one thousand oncospheres. A positive reaction was obtained in all, but in those infected with 25 oncospheres and less the reaction became progressively weaker. G.I.P.

(931bs) Ascariasis in 236 piglets (two to six months old) was treated by gastric intubation of 1 to 3 litres of oxygen. Cure was achieved in 41·9% of pigs after one treatment and in 53·4% after two treatments on two consecutive days. Autopsy showed that the oxygen killed young worms but was not sufficiently active against adults. A combined treatment with oxygen and santonin gave 100% efficacy. G.I.P.

(931bt) Helminth infections of pigs inflict great losses on the meat industry in Russia. 68% of the diseased carcasses recorded at slaughterhouses are due to helminths. Pigs originating from collective, subsidiary farms were infected at a rate of 68% and only 7·1% were graded as fat or semi-fat. Sty-raised pigs from state farms were only infected to an extent of 4% and 71·2% were graded as fat or semi-fat. G.I.P.

(931bu) Farm animals in 15 districts of the Odessa area were examined for helminths. Widely distributed among cattle and sheep were *Moniezia expansa*, *Dictyocaulus filaria*, *Dicrocoelium dendriticum*, various species of strongylate nematodes, hydatid and *Fasciola hepatica*. *Chabertia* of sheep and *Thelazia* of cattle were rarer. Pigs were extensively infected with *Ascaris suum*, *Trichuris suis* and *Metastrongylus*, and horses with *Parascaris*, oxyurids, *Parafilaria* and strongylate nematodes. G.I.P.

(931bv) Phenothiazine in doses of 8 gm. to 20 gm. per animal was given as an oral dose or fed freely as bricks made with chalk and salt to sheep infected with strongylate nematodes. Subsequently, from the 12th to the 24th day until the 72nd day, the number of eggs of *Haemonchus*, *Ostertagia*, *Trichostrongylus* and *Chabertia* passing in the faeces was depressed, and of those passed none or only a few developed. G.I.P.

(931bw) Trach reports an outbreak of paramphistomiasis among calves born during 1955 and 1956 on six farms in the west forest area of the Ukraine. He describes the symptoms observed and the pathological changes revealed on autopsy of calves which had died of the infection. Some of the animals were also infected with various other helminths. G.I.P.

(931bx) *Avitellina* infection of sheep is wide-spread in southern Kazakhstan. 90% of adult sheep were infected during the peak period from the end of February to the beginning of April. Ulyanov quotes results from tests on anthelmintics stating that the greatest efficacy was obtained with amino-acrichin (74%) and lead arsenite (67%). G.I.P.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

by. CHEBOTAREV, R. S., 1956.—[The use of some fodder plants in the control of parasitic infections of farm animals.] pp. 194–197.

bz. SHTUN, F. A., 1956.—[Eradicating helminths from sheep by rearing lambs in isolation.] pp. 208–211.

ca. IVASIK, V. M., 1956.—[The parasite fauna of carp in winter.] pp. 276–277.

cb. IVASIK, V. M., 1956.—[The role of other fish in spreading the parasites of carp in fish-breeding farms.] pp. 278–279.

cc. KOLESNIKOVA, M. N., 1956.—[Data on the Monogenea of fish in the Kara-Rimsk lakes (Kazakhstan).] pp. 280–282.

cd. MARKOV, G. S., 1956.—[Some questions on the physiology of fish helminths.] pp. 283–284.

(931by) The fodder plant lupin posesses anthelmintic properties against a number of intestinal helminths. As a result of a one-month diet consisting exclusively of freshly gathered, cut and slightly salted lupin, trichuriasis was fully cured in 200 young pigs, strongyloidiasis was reduced by two-thirds and ascariasis by half. *Oesophagostomum* infection, however, increased. A similar improvement was observed with parascariasis and intestinal strongyle infections in horses. A liberal lupin diet may produce symptoms of poisoning in some animals, but this can be prevented by appropriate regulation in feeding. The author mentions a series of plants which have already found or may in future find a similar application. G.I.P.

(931bz) On a number of collective farms near Kiev, experimental groups of lambs were separated from the dams several days before being put out to pasture and each group reared in isolation. While housed the different age and sex groups were also kept separately. Special attention was paid to appropriate housing conditions, grazing rotation, watering and supplementary feeding. After two-and-a-half years, infection of adult sheep with helminths had fallen to 47·5% and of lambs to 2·9%, while that of the controls had remained at 80·9%. Better development and greater growth, fertility and wool yield were observed among the experimental animals. This system of rearing was particularly effective against *Fasciola*, *Dicrocoelium*, *Dictyocaulus*, *Moniezia* and *Paramphistomum*. G.I.P.

(931ca) [A similar but fuller account of this paper appears in *Zool. Zh.*, 1957, **36**, 1571–1573. For abstract see Helm. Abs., **26**, No. 480c.]

(931cb) From an examination of 425 breeding fish and 195 wild fish, Ivasik shows that pike is resistant to parasites and recommends young pike for supplementary stocking of common carp ponds. *Carassius carassius* should not be used as it is a carrier of species parasitic in common carp, i.e. the helminths *Dactylogyrus vastator*, *Gyrodactylus elegans*, *G. medius*, the leech *Piscicola geometra* and other parasites. *C. auratus gibelio* and the tench were infected among others with *G. elegans* and *G. medius* but only to a small extent. Of wild fish, the roach, rudd and *Leucaspius delineatus* were infected with carp parasites but the perch, spined loach and gudgeon were harmless. G.I.P.

(931cc) Thirteen species of economically important fish from the Kara-Rimsk lakes were examined for parasites. 61·38% were infected with monogenetic trematodes. The Monogenea were represented by ten species of *Dactylogyrus* and one species each of *Gyrodactylus*, *Tetraonchus*, *Ancylodiscoides*, *Ancyrocephalus* and *Diplozoon*. Brief notes give, for each of the species, the extensities and intensities of infection of the hosts and their seasonal variation. G.I.P.

(931cd) [A full and detailed account of this work appears in Dogel, V. A. *et al.* (editors): "Basic problems of the parasitology of fishes" (published in Russian) pp. 122–143. For abstract see Helm. Abs., **27**, No. 324e.]

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

ce. PALI, M. A., 1956.—[Data on the parasite fauna of fish in the Northern Bug river.] pp. 285–286.
cf. CHERNISHENKO, A. S., 1956.—[Data on the parasite fauna of fish in the Dniester estuary.] pp. 288–289.
cg. USTINOV, A. A., 1956.—[Scientific work in the field of phytonematology in the Ukraine S.S.R.] pp. 293–295.
ch. ZINOVEV, V. G., 1956.—[Enzyme activity of some phytonematodes and the biochemical changes in the parts of plants injured by them.] pp. 296–297.
ci. LADIGINA, N. M., 1956.—[The influence of temperature and humidity on stem nematodes of the potato and onion and on the beet eelworm.] pp. 298–299.
cj. MYUGE, S. G., 1956.—[The physiology of phytonematodes.] pp. 300–301.

(931ce) Among the parasites found in eight species of fish in the Northern Bug were 18 trematodes, three cestodes, six nematodes, two acanthocephalans and one leech [only some of these are named in the text]. The fauna was specifically richest in pike (13 species), roach (12 species) and tench (11 species), and in these the most common were respectively *Bunodera luciopercae*, *Dactylogyrus crucifer* and *Asymphylodora tincae*. High rates of infection were also observed with *D. sphyrna* on *Blicca björkna*, *D. diffomis* on rudd, *Allocreadium* sp. in *Carassius* and *Acanthocephalus lucii* in perch. G.I.P.

(931cf) Of the 532 fish (32 species) examined in the Dniester estuary, 73·4% were infected with 54 species of parasites, including helminths. The parasite fauna in the northern part of the estuary was basically fresh-water in character and was specifically richer than that in the southern parts, which was marine in character. *Opisthorchis felineus* metacercariae are reported from fish in this estuary for the first time; they were present in ruff. G.I.P.

(931cg) Ustinov points out that there are very few recent surveys of the distribution of plant nematodes in the Ukraine. Ten species are known for crops, the most widely distributed of which are *Ditylenchus destructor*, *D. dipsaci*, *Heterodera schachtii* and *Meloidogyne*. The other species are *H. humuli*, *H. avenae*, *H. göttingiana*, *Anguina tritici*, *Pratylenchus pratensis* and *Rotylenchus multicinctus*. G.I.P.

(931ch) Although most of the information in this paper appears in *Zool. Zh.*, 1957, **36**, 617–620 [for abstract see Helm. Abs., **26**, No. 161b] additional data are given on the proportion of carbohydrates in potatoes infected with the stem nematode. If the content of these substances in a healthy portion of a tuber be taken as 100%, then in infected portions the amount of glucose rises to 250–400%, while that of sucrose falls to 71% and that of starch to 30–38%. G.I.P.

(931ci) Laboratory experiments have shown that (i) the lower temperature level for the survival of *Ditylenchus destructor* and *D. allii* was below −28°C. (in a state of anabiosis −40·5°C.) and for *Heterodera schachtii* cysts −20°C., and (ii) the upper level was 47°C. to 52°C. for *D. destructor*, 50°C. to 55°C. for *D. allii*, 43°C. and 45°C. for *H. schachtii* cysts, and 40°C. and 42°C. for infective larvae of *H. schachtii*. *Heterodera* larvae hatched between 10°C. and 37°C., in greatest numbers at 17°C. to 27°C. One generation developed within 32 days at 24°C. Development of *D. destructor* occurred between 5°C. and 34°C. and of *D. allii* between 3°C. and 30°C., the process lasting respectively 68 to 18 days and 51 to 15 days. *D. allii* remained viable in dry air for several months, but *D. destructor* did not survive below 40% relative humidity and *H. schachtii* cysts not below 10%. The most intensive infection of hosts with *D. destructor* occurred at 15°C. to 20°C. and 90–100% relative humidity and *D. allii* at the same temperature and 75–100% relative humidity. G.I.P.

(931cj) Summarized results are given of a study of the physiology of nutrition in *Diplogaster lheritieri*, *Anguina tritici*, *Ditylenchus allii*, *D. destructor* and *Meloidogyne incognita*. G.I.P.

931—PROBLEMI PARAZITOLOGII. [Transactions of the Scientific Conference of Parasitologists of the Ukrainian SSR.], 2nd (1956), 356 pp. [In Russian.] (cont.)

ck. RISS, R. G., 1956.—[The source of infection and means of entry of the potato stem eelworm.] pp. 302–303.
cl. SVESHNIKOVA, N. M., 1956.—[*Meloidogyne* and its control in green-houses.] p. 304.
cm. SUDAKOVA, I. M., 1956.—[On the distribution of nematodes in plant organs.] pp. 305–306.
cn. TERESHCHENKO, E. F., 1956.—[Results of a study of *Ditylenchus destructor* conducted by the Nemeshaev Experimental Station.] pp. 307–308.
co. TURLIGINA, E. S., 1956.—[The treatment of *Meloidogyne* in green-house plants.] pp. 309–310.
cp. SHMALKO, V. F., 1956.—[The character of *Meloidogyne* infections in ornamental plants in green-houses.] pp. 311–314.

(931ck) The chief sources of potato stem eelworms are infected seed potatoes and tubers which remain in the soil after the harvest. On examination of fields one year after an infected potato crop, a few eelworms (immature males) were found on cucumber plants, but none were present on barley or on the weeds, *Salsola kali*, *Linaria vulgaris*, *Fumaria officinalis*, *Stachys annua* and *Setaria viridis*. G.I.P.

(931cl) Sveshnikova states that *Meloidogyne* is one of the most wide-spread parasites of vegetables in southern U.S.S.R. and emphasizes the importance of appropriate measures of control. G.I.P.

(931cm) Various organs of different types of onion and of three related species of weeds, were examined in detail for nematodes. Species of nematodes common to all the plants were present in different numbers and in different organs in each plant. The difference depended on the characteristic structure of the organ. All organs of varieties of perennial onion with soft leaves and stem were infected, while in varieties with a woody stem this was free of nematodes (except 10·0 cm. nearest the root) although in the flowers and seeds various Aphelenchoidea and Cephalobata were present. G.I.P.

(931cn) *Ditylenchus destructor* causes yearly losses in the potato crop in the Ukraine. A considerable measure of control can be achieved by using summer crops (which are more resistant than spring crops), by an early harvest and by the use of seed potatoes obtained from healthy stock only. G.I.P.

(931co) Out of several substances tested to supplement soil treatment only potassium thiocyanate achieved the required nematostatic effect against *Meloidogyne* infections in cucumbers. Following its application to the plant, a considerable reduction was observed in the infection of various organs and in the fertility of the female worms (egg sacs contained 97 to 123 eggs as compared with 987 to 1,015 in controls). In the concentrations used [not given here], potassium thiocyanate was harmless to the plant and was most economical when used in the early stages of the infection (early May). G.I.P.

(931cp) 18% of all the ornamental plant species in green-houses of the Principal Botanical Gardens of the Academy of Sciences of the U.S.S.R. were infected with *Meloidogyne*. Shmalko divides the infected plants according to their resistance into four groups. The first group showed typical infection with well formed galls and contained 70% of all infected species. The second group also showed little resistance, but typical galls were not formed although small swellings were sometimes present, e.g. most Araceae. The third group was small and was characterized by a defence reaction in the plant, which was either the appearance of necrosis in the parenchyma surrounding the worm (e.g. *Dieffenbachia* sp. and *Agapanthus umbellatus*), or the formation of a capsule around the worm (e.g. in *Hedychium coccineum* and *Anthurium scherzerianum*). Such isolation of the parasite often led to the death of the new generation and of the females. In the fourth group, the larvae after infection could not develop and were starved due to the absence of giant cells (e.g. various ferns, citrus plants, orchids, conifers and others). G.I.P.

932—*RICHTER, H., 1956.—" Über die Brauchbarkeit des Selinon als Anthelminthikum bei Nematoden- und Cestodenerkrankung des Hundes." Dissertation, Leipzig.

933—*SCHULTE-KRUDE, F. J., 1956.—" Die Verbreitung der parasitären Erkrankungen der haustiere im Kreise Tecklenburg." Dissertation, Giessen.

934—*SCHWING, E., 1956.—" Verbreitung der wichtigsten Haustierparasiten im südlichen Teil der Oberrheinebene zwischen Märkt und Neuenburg, unter Berücksichtigung der Zusammenhänge der Parasitenverbreitung mit der Senkung des Grundwasserspiegels durch die Rheinkorrektion und den Bau des französischen Rheinseitenkanales." Dissertation, Munich.

935—SKRYABIN, K. I., 1956.—[Trematodes of animals and man. Principles of trematodology. Volume XII.] Moscow: Izdatelstvo Akademii Nauk SSSR, 932 pp. [In Russian.]

The volume is devoted to Haploporidae and a monograph on Echinostomatidae; it is illustrated by 312 figures. The Haploporidae are revised by Skryabin who accepts Belous' (1954) two subfamilies (a) Haploporinae which included *Haploporus*, *Saccocoelium*, *Lecithobotrys* and *Dicrogaster*, and to which he now adds *Paralecithobotrys* and *Wlassenkotrema* n.g. (erected from *H. longicollum*) and (b) Waretrematinae which included *Waretrema* and *Skrjabinolecithum* and to which he now adds *Chalcinotrema*. The classification of Echinostomatidae is revised by Skryabin & Bashkirova, and the following are the major changes made. Cotylotretinae, Stephanoproraoidinae, Parorchiinae and Pseudechinostomatinae Skryabin & Bashkirova, 1956 are placed in Cotylotretidae Skryabin & Bashkirova, 1956 [these last two are apparently new but are not defined in this volume and the family is not dealt with here]. The Cotylotretidae and Echinostomatidae fall into the Echinostomata. The Echinostomatidae are divided into 11 subfamiles. 1. Echinostomatinae comprising the genera (i) *Echinostoma* which includes *E. citellicola* n.sp. Kadenatsii, 1956 from *Citellus pygmaeus*, and *E. goldi* n.sp. Oshmarin, 1956 from *Pernis apivorus*; (ii) *Dietziella* n.g. erected for *D. deparcum* n.comb. (type), *D. egregia* n.comb. and *D. volvulus* n.comb.; (iii) *Echinodollfusia* n.g. erected for *E. stenon* n.comb.; (iv) *Echinoparyphium* which includes *E. minor* n.comb. and *E. sinorchis* n.sp. Oshmarin, 1956 from *Cyanopica cyana*, *E. recurvatum circi* n.subsp. Oshmarin, 1956 from *Circus melanoleucus*, *Echinoparyphium* sp. No. 1 Oshmarin, 1956 from *Tetrastes bonasia*, *Echinoparyphium* sp. No. 2 Oshmarin, 1956 from *Aquila clanga* and *Echinoparyphium* sp. No. 3 Oshmarin, 1956 from *Anas crecca*, while *E. skrjabini* becomes a synonym of *E. cinctum* and *E. splendens* is conditionally transferred to *Echinostoma*; (v) *Euparyphium* with the specific composition as it was before Mendheim's (1943) revision and with *Echinocirrus* as its synonym; (vi) *Paryphostomum* which includes *Paryphostomum* sp. Dotsenko, 1956 from domestic fowls and *Echinostoma fragosum*, *E. exechinatum* as a synonym of *P. radiatum*, and *Echinochasmus tenuicollis*; (vii) *Petasiger* with two subgenera, *Petasiger* which includes *Echinostoma hospitale* and *Echinoparyphium phalacrocoracis*, and *Neopetasiger* (of which genus *Navicularia* is now made a synonym) which includes *E. jubilarum* (as suggested by Dollfus); (viii) *Baschkirovitrema*; (ix) *Drepanocephalus*; (x) *Ignavia*; (xi) *Longicollia*; (xii) *Moliniella*; (xiii) *Nephrostomum*; (xiv) *Parallelotestis*; (xv) *Patagifer* and (xvi) *Prionosoma*. 2. Eurycephalinae n.subf., in which the body is very broad anteriorly, the collar retains only the corner spines, the oesophagus is very long and the ventral sucker is situated in the anterior half of the body, is erected for *Eurycephalus dogieli*. 3. Hypoderaeinae n.subf., in which the collar is not well developed and is transversely oval in shape, the head spines are in a double row uninterrupted dorsally and the ventral sucker is well developed and placed far forward, contains (i) *Hypoderaeum* (type), (ii) *Multispinotrema* n.g. erected for *Echinostoma charadrii* and (iii) *Skrjabinophora*: *Hypoderaeum* includes *H. microspina* n.comb. and *Hypoderaeum* sp. Oshmarin, 1956 from *Streptopelia orientalis* while *H. magnocirrus* becomes a synonym of *H. conoideum*. 4. Echinochasminae, to which has been added *Saakotrema* n.g. (for *Opisthometra* Saakova, 1952 *nec* Poche, 1925, with the only species *S. metatestis* n.comb.), also contains, in *Mesorchis*, the new combinations *M. gracilis*, *M. mergi* and *M. pseudodenticulatus* and, in *Echinochasmus*, *E.* (*Episthmium*) *colymbi* n.sp. Shigin, 1956 from *Colymbus cristatus*. *E. recurvispinus* is synonymous with *E. euryporus*, *E. botauri* with *E. amphibolus* and *E. beleocephalus chankensis* with

E. beleocephalus. 5. Himasthlinae, in which *Acanthoparyphium tyosenense* is made a synonym of *A. kurogamo* and *A. longivitellatum* of *A. spinulosum*. The other six subfamilies Allechinostomatinae, Chaunocephalinae, Microparyphiinae, Nephroechinostomatinae, Pegosomatinae and Sodalinae have remained basically unchanged. G.I.P.

936—SWIERSTRA, D., 1956.—" Een onderzoek naar het zuurstofverbruik van infectieuze larven van bij het paard voorkomende Strongylidae." Thesis, Utrecht, 134 pp. [English summary pp. 127–132.]

The extremely detailed investigations reported in this paper were carried out by Swierstra for his thesis for the degree of Doctor of Veterinary Science at Utrecht University. They deal in detail with the oxygen uptake (Qo_2) of third-stage larvae of horse strongyles under very varied conditions relating to temperature, concentration of the larval suspension, media in which suspended, length of incubation, action of light, action of antibiotics, and effect of bacteria, etc. The larvae were grown in finely divided horse faeces at 27°C. for seven days; suitable dilutions (dry weight 16·4 mg. in 10 ml. suspension) were made in sterile tap-water, 0·9% sodium chloride, or phosphate buffer; and the dilution strength was measured in a photoelectric colorimeter. The Qo_2 was measured by a microrespirometer made on the principle of a Bancroft differential manometer. This was shaken 160 times per minute, and readings taken every hour at least six hours. A large number of experiments were performed the results of which are reported in 58 tables. The principal conclusions are: (i) that increase of temperature is correlated with increase of Qo_2 as calculated between 5°C. and 40°C.; (ii) that bacterial contamination of the larval suspensions played little or no part in this increased Qo_2; (iii) that increased frequency of shaking caused an increased Qo_2; (iv) that the decline in Qo_2 was associated with increased activity of the larvae, hence conditions in the medium itself were not the cause; (v) that short term slowing of larval activity was the consequence of the hindering of the excretion of metabolic products through their sheaths, rest-pauses perhaps being caused by the rise in degradation products due to increased oxidative metabolism; (vi) that the sheaths screen the larvae against a too rapid output of their reserve food stores; (vii) that a mixture of penicillin and streptomycin added to a larval suspension increases larval activity though this may be temporary; (viii) that weak diffused daylight also causes increased Qo_2 which, however, does not increase further in strong light. W.K.D.

937—*TARASOV, V. R., 1956.—[The treatment of coenuriasis in ruminants.] Moscow: Izdatelstvo Selskokhozyaistvennoi Literaturi, 2nd edit., 59 pp. [In Russian.]

938—TEYSSANDIER, M. J., 1956.—" Recherches sur la bilharziose uro-génitale à propos de cent observations." Thesis, Marseilles, 122 pp.

939—*YASAROL, S., 1956.—" Köpeklerimzde *Echinococcus granulosus* (Batsch, 1786) Rudolphi, 1805 üzerindeki arastirmalar." [Medicine in granules for dogs infected with *Echinococcus granulosus* (Batsch, 1786) Rudolphi, 1805: investigations thereon.] Ankara.

INDEXES

NOTE

In all indexes the reference is to the serial numbers and not to the pages. Numbers in **bold** type indicate abstracts, and numbers in Roman type refer to title-only entries.

In the Author Index there are no cross-references to show joint authorship, but authors of joint papers are listed individually. Thus, a paper by "Brown, B., Jones, A. & Smith, J." would have three separate entries, "Brown, B.", "Jones, A.", and "Smith, J." but the serial numbers under the subsidiary authors are given in parentheses.

In the Index of Subjects, alphabetization is under the first word (e.g. "*Acer* sp." before "*Acerina* sp."). Under the generic name of a helminth the following order is observed: papers on the genus as such; papers on undefined species; papers on new and defined species, e.g.

Capillaria
— spp.
— *aerophila*
— *amarali* n.sp.

In cross-entries under names of hosts, the specific names of new species of helminths are omitted. Hosts are indexed under their scientific names, where given, except domesticated animals (e.g. cat, pig, sheep), crop plants (e.g. oats, rye, tobacco), and where numerous hosts of the same group are listed in the one paper (e.g. amphibians, birds, cereals, legumes, mammals). The use of alternative scientific names for host or parasite is avoided wherever possible but in cases in which nomenclatorial or taxonomic confusion still exists the same organism may appear under more than one name.

Anthelmintics are listed alphabetically under that word, either by their trade name or by the active principle. There are no cross-references between proprietary drugs having the same or similar constituents and no classification of the drugs is attempted. They are also entered under the name of the parasite or disease and under the name of the host. For eelworms parasitic in or on plants they are entered alphabetically under *Nematicides* (*plant eelworm*) and under the name of the eelworm.

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(The reference is to the **serial** number, not to the page.)

INDEX OF SUBJECTS

(The reference is to the serial number: numbers in **bold** type indicate abstracts.)

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546c (Abstract)	Line 5 For "*Vellonia*" read "*Vallonia*"

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From Volume 29, which will be issued during 1960, each volume of *Helminthological Abstracts* will be issued in four quarterly parts appearing in March, June, September and December. Each part will include abstracts of all papers which come to hand during the relevant period of preparation, regardless of their date of publication; and will be provided with author indices only. The title page, author and subject indices covering each volume will be issued in March of the following year.

The present arrangement by which the literature published in each year is brought into a single volume when bound, will terminate with the completion of Volume 27 (1958).

Volume 28 will be a composite production. Part I will contain abstracts of such literature published in 1959 as comes to hand before September of that year; parts 2, 3, 4 and 5 will contain titles (without abstracts) of all helminthological books and articles which came to the attention of the Bureau after the completion of the relevant annual volume under the old scheme since its inception; and part 6 will contain the title-page and annual indices.

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